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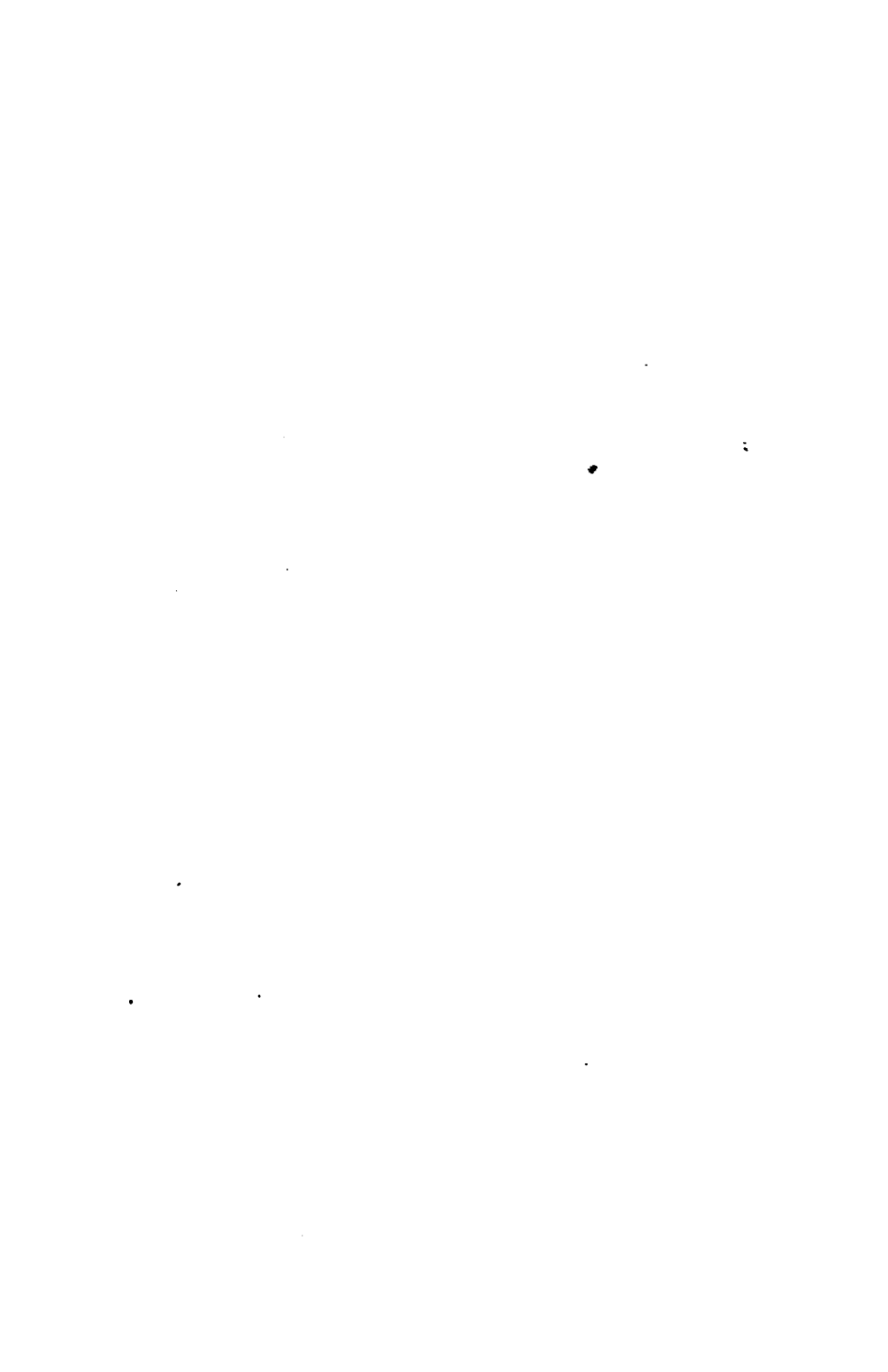


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HINTS
IN
THE OBSTETRIC PROCEDURE.



HINTS
IN
THE OBSTETRIC PROCEDURE.

BY
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—
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PREFACE TO FIRST EDITION.

The kind reception accorded, by both the medical journals and the profession, to the ANNUAL ADDRESS entitled "Hints in the Obstetric Procedure," delivered by the author before the Philadelphia County Medical Society, and an almost constant demand for it from all portions of the country, have emboldened him to rewrite the subject matter of that address, and to present it in its present form.

No attempt is made to exhaust the subject, or to offer a complete *vade mecum*. The author merely desires to present, as clearly and compendiously as he may, his views in certain matters connected with the obstetric art, with a hope that he may thus contribute to a better performance of this art, and that, while he is aiding his fellow practitioners, he may divest this

branch of medicine of much of its mystery and dread—a dread too often shared alike by physician and patient.

He would earnestly urge upon those who propose to practice obstetrics, that they should make themselves thoroughly masters of the science and the art, that they may respond to each call to the lying-in chamber with a proper feeling of confidence in their knowledge and skill, and at the same time with a true appreciation of the great responsibility they thus assume.

The great bugbear, “Meddlesome Midwifery,” has too long acted to deter the physician from the performance of his duty as the aid, the assistant, of nature in this sacred act of the wife and mother.

It is a great source of regret that so many of our brethren, even of those who have but recently emerged from the care of the “fathers in medicine,” still adhere to exploded dogmas and old wives’ fables, and are too ready to allow the parturient woman to be guided by the ideas, and even follies, of those around her, in place of themselves assuming the post of director—yea, master of the situation. Such seem content with the formal visit, and inquiries of the

nurse, who soon comes to ignore the doctor; and all goes well, more by good fortune than by good management. These gentlemen would have greater assurance of a successful result in their cases if they would fully discharge their duty as physicians—caretakers—and would deem nothing too small or unimportant in the lying-in chamber.

“The old axiom, ‘meddlesome midwifery is bad,’ has had great force in obstetric practice; but it is, perhaps, better adapted to ignorance or partial knowledge than to perfect comprehension of the mechanical and motor phenomena of natural labor. I have no doubt the time will come when these will be so well understood that the finger of the accoucheur will be in accordance with every change in the passage of the child during parturition. Proverbs are always one-sided. The phrase quoted has, no doubt, been useful in preventing improper interference, but it has also a tendency to the prevention of interference when this is both useful and necessary.”*

“Then the physician becomes, not the substitute for, but the handmaid and assistant of, nature. As such, the intelligent physician goes to the bedside of his suffering patient, in the sore hour of her travail, with a full knowledge of the extent of his resources; con-

scious of his powers, and strong in their possession, he anticipates and prevents danger. 'Meddlesome midwifery is bad.' Delay and timidity in operating are bad."†

*Dr. Tyler Smith, Lectures on Obstetrics, p. 867.

†Dr. J. S. Parry, Amer. Journ. of Obstetrics, Aug. 1873, p. 191.

PREFACE TO THE SECOND EDITION.

The author, in acknowledgment of the great favor accorded to the first issue of his "Obstetric Hints," has endeavored in this edition to give a concise response to the numerous requests for information on subjects not included in the former work. To this end he has also thoroughly revised the text, and he trusts that his many professional friends will not be disappointed in the result.

1400 Pine St., Phila., March, 1879.

TABLE OF CONTENTS.

	PAGE
FALSE PAINS,	13
SLOW DILATATION,	18
INEFFICIENT PAINS,	23
OXYTOCIC REMEDIES,	29
ERGOT,	29
QUININE,	31
RUPTURE OF THE MEMBRANES,	33
POSITION,	35
THE PERINEUM,	38
THE VECTIS,	40
THE FORCEPS,	41
THE PLACENTA,	49
THE BINDER,	54
AFTER PAINS,	55
RETENTION OF THE URINE,	59
AFTER DELIVERY,	63
PURGATIVES,	64
HEMORRHAGE,	65
CONVULSIONS,	73
BREECH PRESENTATIONS,	77
ARTIFICIAL RESPIRATION,	81
NOURISHMENT OF THE WOMAN,	84
NOURISHMENT OF THE CHILD,	89
SORE NIPPLES,	93
RETRACTED NIPPLE,	96

	PAGE
THE LOCHIA,	97
MILK FEVER,	99
THE INFANT,	101
THE CORD,	102
HEMORRHAGE FROM THE CORD,	104
CAPUT SUCCEDANEUM, ETC.,	106
CONJUNCTIVITIS,	107
TETANUS,	112
GENERAL MANAGEMENT,	113

HINTS

IN THE

OBSTETRIC PROCEDURE.

False Pains.

Toward the close of the pregnancy, and prior to the inception of the expulsive pains, the pregnant woman, especially a primipara, is frequently attacked by more or less powerful, but irregular, contractions of the uterus. These are commonly known as "false pains." Some women are peculiarly liable to these attacks, and suffer for weeks; hence they are rendered weak and irritable, and less able to endure the usual expulsive pains which are necessary for delivery when labor really commences. Those who are subject to this complication are generally found to dread these pains more than they do those incident to delivery. Now, as there can be no advantage in allowing such an attack to continue, but, as we see, a positive disad-

vantage, it becomes the duty of the medical attendant, as soon as he recognizes the true condition of his patient, to interpose for her relief. Almost invariably, the false pains are felt in the front, while real labor pains begin in the back, and shoot round on either side.

It is important that the diagnosis should be correctly made, and hence a vaginal examination is imperatively demanded. In this connection, it is proper to call the attention of the obstetrician to the importance of making such an examination before he quits the lying-in chamber, as without it he cannot be positive as to the true condition of his patient. Properly made, the examination reveals to him the exact state of the organs concerned in parturition, and gives him the key to his position. Hence it must be insisted upon, and the physician should not allow himself to be detained without it, as it may save many weary hours of waiting and watching.

At this examination the physician should note the condition and position of the os uteri, whether high up or low down, rigid or soft, closed or patulous; the nature of the pains, their relative frequency and duration, their effect upon the presenting part of the child, and whether the circular fibres of the os are

disposed to relax before it; the condition of the enveloping membranes, whether intact or broken, allowing the waters to drain off; finally, whether the rectum is empty, or, as is too often the case, is filled with hardened feces.

From the data he has thus obtained the attendant is prepared to give a prognosis, and to arrive at some conclusion as to the probabilities of the delivery. But he should be cautious, lest he promise more than will be performed. Those who have had much experience in the obstetric art can readily recall many instances where hours have elapsed before the conclusion of the labor, though at first there appeared every reason to anticipate a speedy relief.

Should the os be high up, so as to be reached with difficulty, slightly patulous and rigid, there is good reason to believe that the labor has not yet commenced, or that it will be slow and tedious. Under these circumstances, measures should be instituted by which to relieve the patient of what is, to her, useless and exhausting agony. The indication is to administer a full dose of some anodyne. Generally, some preparation of opium is employed, but, undoubtedly, the best remedy is chloral. In the vast majority of cases this drug will secure to the patient a profound

and refreshing sleep, from which she awakes free from pain, to continue so until true labor commences; or the false pains are replaced by the proper, regular contractions of the uterus, and a second examination will reveal the fact that during the interval the rigid os has melted away, and complete dilatation has taken place.

The experience of all those who have employed chloral shows it to be particularly applicable to these cases. Schroeder says: "Chloral has been given in tardy and exhausting labors. After an hour's sleep, on awakening, the labor was very rapidly terminated by powerful pains. We have also observed that by the use of chloral in cases where the uterine action was very painful without being efficacious, the labor assumed an instantaneously rapid course, although the intervals between the pains had considerably increased in duration." It would appear that even while chloral produces a calm, refreshing sleep, it does not by any means entirely check the progress of labor when this act has commenced. For it is invariably found that dilatation has gone forward, and generally, so completely is this accomplished, that on the patient awakening, a few quick pains will often complete the delivery. I regard the use of this remedy as pro-

ducing results similar to those of anæsthetics in surgery, and therefore similarly indicated. While it relieves to a marked degree the pains of travail, it measurably contributes to a safe and speedy convalescence.

These false pains usually occur in the cases of persons of a rheumatic or neuralgic tendency, and are found to prevail more frequently in seasons predisposing to this form of disease. In some persons they are readily controlled by enemata of morphia or chloral. As the latter remedy is sometimes found to be extremely disagreeable when exhibited by the mouth, it may be well to remember that it has an excellent effect when thrown into the rectum in a solution of gum acacia, starch, etc.

At the time of making his first visit, the physician, by proper inquiry, may learn much of the probabilities of the case. Thus, if the term of pregnancy is not completed, these pains, when allowed to continue, may lead to premature labor, and it is therefore more urgent that they should be controlled.

If there is hemorrhage, a careful investigation becomes important, especially when it occurs about the seventh month, lest placenta prævia be present; or

the discharge of clots may reveal concealed hemorrhage, which is always more or less dangerous.

Slow Dilatation.

Where the os uteri is dilatable, but where from any cause, as insufficient expulsive pains, the progress is slow, much can be done by aiding the dilatation. It must not be understood by this that forcible dilatation is intended, though that sometimes becomes necessary; all who have had much obstetric experience will agree that, in very many instances, by the gentle but firm sweep of the finger around the advancing part of the child, within the os, the process of expansion has been greatly accelerated, and the delivery more readily completed. Of course, this manœuvre must not be attempted if the membranes have not yet been ruptured, as otherwise an additional cause of delay may be introduced. The rupture of the membranes will claim attention further on.

Traction upon the anterior lip of the os uteri, by means of one or two fingers, generally aids in the dilatation. This serves also another useful purpose, by correcting the tendency to displacement of the os, so to speak; as is often observed where the os is found far back toward the promontory of the sacrum,

and the head appears to be driven not directly into the os, so as to aid in its dilatation, but rather bores against the anterior wall of the cervix. This effort should be made at each pain, and its good effects are often speedily apparent.

Still further to aid the complete opening of the mouth of the womb, the gravitation of the child and its pressure upon the os may be invoked. For this reason the patient should be urged to remain out of bed, and if possible, to walk about the room, aided, when necessary, by her attendants. A double gain is the result: the dilatation is aided and the child is kept in a position more favorable to delivery, while the woman is comforted by the knowledge that she is helping herself. She is thus less liable to become irritable and discouraged, as is so often observed where the woman, required to remain in a fixed posture, exerts herself with nervous haste and force, and speedily becomes impatient at finding her expulsive efforts prove fruitless.

Hence, except under particular circumstances, it is better to explain to her clearly the true condition of affairs. Especially in a first labor is this useful, as all is strange to the patient, she dreads something unknown, and often looks for impossibilities. It

should be explained that this is merely the stage of preparation for delivery, and much of her anxiety and impatience will be relieved.

Another point is important. As long as the physician remains with the patient she feels a momentary expectation of delivery, and is tempted to demand his constant aid, and feels neglected unless he is supposed to be helping her. Hence it is never advisable for him to remain when he finds that his services are not and will not be in immediate demand. Let him give explicit directions as to quiet, etc., and leave, at least for a time. During this interval, as nothing but exhaustion can be gained by the efforts of the patient, she should be counseled to bear her pains quietly, and to make no expulsive efforts. At this stage, particularly when dilatation is very slow and painful, the value of chloral is marked. Even when it is not given in sufficient quantity to produce sleep, its benefits are shown by obtunding sensibility, without in the least interfering with the process of dilatation. After a sleep or rest more or less prolonged, the patient awakes to vigorous expulsive efforts, and for which she has now renewed strength. In nearly every instance, an examination will show that the circular fibres of the os uteri have relaxed, and that dilatation is complete.

Playfair says, "The agent, *par excellence*, which is most serviceable, is chloral, which is of special value in the more common cases, in which rigidity is associated with spasmodic contraction of the muscular fibres of the cervix. Two to three doses of 15 grains, repeated at intervals of twenty minutes, are often of almost magical efficacy, the pains becoming steady and regular, and the os gradually relaxing sufficiently to allow the passage of the head; chloroform acts much in the same way, but, on the whole, less satisfactorily, its effects being often too great; while the peculiar value of chloral is its influence in promoting relaxation of the tissues without interfering with the strength of the pains."

The reverse of this picture is seen where the woman is permitted to labor hour after hour, constantly expecting her deliverance, and constantly doomed to disappointment, until, exhausted, she lies, with scarcely an effort to bear down, and at the last instrumental aid becomes imperative, to save the lives of both mother and child; and the former experiences a tedious recovery, added to which, generally, is the necessity for the use of the catheter for days, even if other and more dangerous symptoms do not follow. The child also, if not sacrificed at once, is in

many instances more or less injured, which may result in permanent invalidism.

It is in just such cases that the inexperienced physician is tempted to employ ergot. Nor does this temptation come solely from his desire to succor his patient, for those around him, not understanding the cause of delay, generally attribute it to inefficient pains, and expect that the "forcing medicine" will give them the proper strength and frequency. (See Ergot.)

When the membranes are already broken recourse may be had to the caoutchouc dilator. This is a small rubber bag with a constriction in the centre, making it fiddle-shaped, which insures its retention when placed in position, so that the contracted part will occupy the os uteri. When this bag is expanded, either by air or particularly by water, a powerful force is brought to bear upon the constricted os, and its dilatation is rapidly effected. These bags being of different sizes, the smaller should first be employed, and after being fully distended and allowed to remain, say fifteen or twenty minutes, it may be removed and a larger one employed, until the desired effect is obtained.

Inefficient Pains.

The lack of expulsive power in the uterine contractions is often due to the want of sleep. The more prolonged the first stage, or that of dilatation, the more likely are the subsequent pains to be wanting in expulsive power. Hence, an additional advantage is derived from the exhibition of some narcotic, which, by producing sleep, will shorten this stage.

There can no longer be any doubt that opium frequently acts favorably, by increasing the efficiency of the pains. Particularly is this observed where great nervous excitement is present.

Chloral has been observed by the author, in repeated instances, to produce a similar effect. Therefore, when the pains are quite inefficient, before having recourse to ergot, the physician should employ one of these remedies, preferably the latter, in sufficient dose, say one grain of opium, or twenty grains of chloral, and repeat if necessary. So marked has been the result after the use of chloral, that the author has been accused in several instances of using ergot.

A careful examination should always be made, in order to detect, if possible, the cause of the inefficiency of the uterine contractions. A bladder filled with

urine often will completely paralyze the efforts of the womb, and put a stop to the progress of the delivery. The indication here is to employ the catheter and empty the bladder.

Occasionally this condition is due to CYSTOCELE. A portion or the whole of the bladder is driven down into the vagina, in front of the advancing part of the child, acting as a formidable obstacle to delivery, and being liable to rupture at any moment. Of course, the bladder should at once be emptied. In such cases the use of the male catheter will be necessary, the female instrument being too short, and often the compression and tortuosity of the urethral canal are so great that the bladder can only be reached by the employment of the gum catheter. At the moment of passing in the instrument the advancing part of the child should be pushed up. When the urine is evacuated the bladder readily returns to its normal position, and the labor is speedily terminated. Should the physician fail in passing the catheter in the ordinary position, the patient may be placed upon her knees and elbows, when the child will recede and permit the instrument to pass into the bladder. In extreme cases it may become necessary to employ aspiration

Should an examination reveal the presence of a knuckle of intestine, which at each pain is compressed between the parts of the woman and the child, the hernial protrusion must be replaced during an interval between the pains. A similar trouble may be caused by a calculus in the bladder falling down into the passage, and will require similar treatment. Fortunately these complications, particularly the latter, are of rare occurrence.

More frequently, the delay is the result of the presence of a hardened mass of feces in the rectum. This acts not only by its presence as an obstruction, but it also causes the patient to refrain from putting forth her efforts; she rather restrains her pains, with an instinctive dread of evacuating the rectum. A full injection of castor oil, with soap and warm water, will generally produce a marked and agreeable change in the nature and effect of the pains. It may be proper here to mention that the administration of castor oil early in labor is often found to aid in the dilatation of the os uteri. The author is not prepared to endorse this article in preference to any other laxative, though the claim has been made that it has a specific effect upon the sphincters both of the rectum and the uterus.

The use of a large enema, simply of warm water, powerfully distending the rectum, often produces an equally good effect, and at the same time tends to make the delivery more comfortable both for patient and physician.

Another mode of increasing uterine action is the passage of a gum catheter within the os uteri, and carrying it around between the child and the womb. This is particularly useful prior to the rupture of the membranes, but it has also been found of service after the partial evacuation of the liquor amnii.

The application of the warm douche is another plan, and one which will act a double part. It excites the womb to renewed action, and facilitates the dilatation when that is tardy. This is more especially of value where the labor is rendered tedious by the early rupture of the membranes, and prior to the dilatation of the os uteri.

The use of the air-bag or colpeurynter is worthy of consideration. Whether the membranes are intact or are ruptured, this instrument proves a valuable means to aid dilatation and also excite the contractions of the womb. The bag should be passed well up to the os uteri, and then rapidly filled with air or warm water; the latter is preferable, as it can exert more power, being almost incompressible.

Externally, friction over the abdomen will serve to increase the contractions of the womb, just as we find it to do when we are about to deliver the placenta.

Along with friction the physician may resort to pressure over the body and fundus of the womb, supplementing, as it were, the contractions. This should be performed by placing both hands, side by side, upon the abdomen over the womb, and making firm downward pressure at the moment of a contraction, imitating the pains by increasing the pressure and then gradually lessening it. When an intelligent nurse or assistant is at hand, the physician may employ such aid in this manœuvre; and he will observe the beneficial effects at each effort. Often, just at the moment of delivery, the head is tediously delayed in its exit, and this plan will obviate the necessity for the use of the forceps.

This method, however, can rarely prove of much value unless the dilatation is almost or wholly completed, and is not recommended except when the delivery has been checked by the pains having become weak, and when the presenting part is already about to make its exit. In other cases, where the head is still high up, the employment of the forceps is indicated.

This method becomes of great value, where the head

has been delivered and the shoulders are delayed; also in breech presentations such aid will often speedily bring the part down, or materially facilitate the efforts of the physician.

Sometimes this pressure may be made by means of a broad piece of muslin placed above the fundus of the womb, and the ends passed diagonally down on either side, to the rear of the patient, and drawn upon by an assistant during each pain.

Before leaving this subject, allusion must be made to the use of *ELECTRICITY*. A number of writers have detailed cases where, by the passage of an electric current through the uterus, one pole having been placed upon the abdomen, over the upper part of the womb, and the other passed within its mouth, the pains have been greatly increased, or provoked, and the delivery soon accomplished.

The physician should faithfully employ all these methods, and never expose either mother or child to the dangers incident to protracted labor.

The efforts of the womb may also be partially paralyzed by its enormous distention, from an excess of liquor amnii. When this is observed, the remedy is to rupture the membranes, and permit the contained fluid to drain off. In some cases the effect is immedi-

ate; but it would often appear as though the womb were temporarily checked in its contractions by this very manœuvre, the sudden removal of an obstacle, and as if it required a few minutes for the muscular fibres to contract again sufficiently to act expulsively upon the firm, resisting body of the child.

This brings us to the subject of OXYTOCIC remedies. Chief among these is

Ergot.

As a parturifacient, ergot has generally been regarded as pre-eminent. But it has become a serious question as to when its use is proper and indicated. It may be well first to mention those conditions under which it should not be employed. When an examination reveals an undilated condition of the mouth of the womb, ergot is positively contra-indicated. If it acts at all, it only serves to lash the womb into a fury, setting up an irritable condition in that organ which can do no good, and may even result in causing rupture of the uterus. Therefore, before this agent is employed, the os must be well dilated, or soft and dilatable.

Again, by the improper use of ergot, causing the walls of the womb to grasp the body of the child, as

in a clonic spasm, for some time before delivery can be accomplished, the child is exposed to great jeopardy, and is often destroyed.

Ergot is also contra-indicated when any mechanical obstacle exists; for instance, disproportion of the head and pelvis; deformity of either; the presence of a tumor; a tendency to eclampsia; certain presentations, as of an arm, etc.

Ergot becomes of value when, by the feebleness of the pains, the delivery is retarded, while the presentation is favorable, and the os dilated or readily dilatable, the head still remaining high up. When the above condition presents, but with the head low in the pelvis, the forceps should by all means be preferred, in order to terminate the labor. One great advantage of ergot when the uterus is inert is, that it causes that organ to contract as rapidly as the delivery is effected, and obviates the tendency to hemorrhage. When, from the history of the case, or from the general feebleness of the uterine contractions, there is reason to apprehend post-partum hemorrhage, ergot is especially indicated, and should be exhibited in a full dose, so as to obtain its complete effect, upon the expulsion of the child. Many excellent practitioners invariably administer a full dose of ergot just as the

presenting part is about to emerge, claiming that they thus secure the patient from the possibility of after hemorrhage or the retention of clots, etc., and the consequent agonizing and exhausting after-pains.

As the knowledge of the value and use of the forceps becomes more general, and also that of the only proper method of compelling the uterus to deliver itself of the placenta, ergot is sure to become of less frequent employment.

Perhaps the better plan would be to give ergot in small but frequently repeated doses, until the effect is produced. The author is positive that, in his own experience at least, this method of administering powerful drugs has proved, in many instances, highly beneficial, and yet with a far smaller aggregate dose.

Quinine,

As an oxytocic, has now obtained a positive standing.

There can be no doubt that it really acts as a stimulant to the action of the uterus, and unless contra-indicated, may be exhibited in all cases where delivery is retarded by reason of inertia of the womb.

Dr. Albert H. Smith, of Philadelphia, claims that it increases the normal uterine contractions, causing

them to be more frequent and intense, thus making the power of expulsion more forcible, yet with remissions, as in the ordinary pains, thus differing in a valuable way from the continued spasmodic effect of ergot; that it maintains the womb in a state of contraction after the complete delivery of the child and its secundines; that the lochia is normally diminished; that after pains are less frequent; that the pulse of the mother is reduced, and she is relieved of any nervous demoralization; that it does not disturb the brain or produce cinchonism.

His conclusions are that quinine possesses no property of its own to cause contraction of the womb, but that its effect is due solely to its power as a promoter of vital energy and functional activity; that when administered in a full dose, say fifteen grains, at the onset of labor, the result is a rapid and safe delivery, when, without its use, the reverse might obtain.

He prefers the bisulphate, as more readily soluble, and hence quicker in its action.

Rupture of the Membranes.

In making an examination, great care should be taken lest a rupture of the membranes be produced. For this reason the examination should be made in the interval between the pains. The membranes then being flaccid, with ordinary care the finger may be swept around within the mouth of the womb, so as thoroughly to inform the physician as to every point which it may be necessary for him to know.

This procedure is of much importance, for it must be remembered that a premature rupture of the membranes and the consequent evacuation of the contained fluid, will make what is commonly known as a "dry labor," with all its disadvantages.

Thus, should turning become necessary, this operation becomes extremely difficult after the waters have been for some time evacuated. When the membranes are intact, the fluid within forms a beautiful wedge-like point, which greatly aids in dilatation. When this is wanting, we have in its place the blunt presenting part, which bruises by its pressure rather than aids to dilate, and almost invariably this stage of labor goes on more slowly and painfully, and with greater risk both to mother and child.

On the other hand, when the mouth of the womb

is fully dilated, or soft and readily dilatable, the toughness of the membranes may act to retard labor. When this is observed, a rupture may be effected by pushing the finger firmly against the membranes during a pain, or, if they are exceedingly tough, almost like parchment, it may become necessary to employ the nail of the forefinger, previously notched like a fine saw, with which to tear them open. Instances are quite common where great delay has been caused by the non-rupture of the amnion, and where delivery has been immediate when this manœuvre was adopted. Even when delivery does not at once occur, the rupture of the membranes can be of no injury under these conditions, and often, by relieving the overloaded and over-stretched womb of a part of its contents, the power of contraction of its muscles is increased, and the pains are thus rendered more effectual. It is also believed that the contact of the child directly with the womb, by the rupture of the membranes, acts as an excitant of uterine contraction, and is recommended as one of the remedies for uterine inertia.

Position.

In repeated instances, after many weary hours of labor, with scarcely any advance of the child, delivery has been speedily accomplished by a change in the position of the woman, as in her irritable and restless condition she turns from side to side, rolls upon her back, or rises to relieve the bladder or rectum.

This is a lesson which should be heeded by the physician who rigorously insists on the patient remaining upon her side, momentarily expecting the delivery. Nature appears to urge the woman to assume that position which is most advantageous for the expulsion of the child, and we find her instinctively endeavoring to aid herself in this way.

The position in labor varies with nations, but when left to herself the patient is invariably observed to take that position which will cause the child to gravitate toward the point of exit. This subject is one which is eminently worthy of the attention of the student of midwifery, as he will find in the habits of women in this crisis much of value and interest.

In America and England the position assumed is upon the left side. In Germany and France, as a general rule, the woman is delivered while lying upon her back. In ancient times labor-chairs of a pecu-

liar form were employed, and are even yet found in some places. A common practice at one time was, to fasten two chairs together by the adjoining legs; the woman then sat, as it were, between the two, holding on by the backs, and the midwife, seated on a low stool in the rear, waited to receive the child. Among the people of Ireland, the position upon the knees is preferred, and would seem to be a very suitable one.

The obstetrician should, from time to time, notice the position and rate of advance of the child. When delay occurs, he will often find the presenting part pressing firmly against the walls of the pelvis at one point, instead of following the curve and keeping its course in the centre of the pelvic cavity. He should then endeavor so to place his patient as to remedy this condition, and to cause the advancing part to occupy a position as near the centre of the passage as may be. Much of the expulsive power of the uterine contractions is wasted by this pressure of the part against the pelvic walls. The advance should always be in a line drawn at right angles to the plane of the pelvic straits. Thus friction is to a great extent avoided, and the expulsive powers are not rendered nugatory. Of course, as the passage through the

pelvic cavity is not a straight, but a curved line, the position may require to be changed from time to time. When the advancing part presses to one side, it will be found that the womb is lying obliquely to the opposite side. This should be remedied by a proper support of the abdominal tumor, by the use of pillows placed beneath it. Even the holding of it up by the hands during a pain has often been followed by a removal of the obstruction and the rapid advance of the child.

Prior to the entrance of the presenting part into the pelvis, the most favorable position will be that of a half-sitting posture. From what has just been said, it will be seen that, unless indications exist to the contrary, the patient will do well not to take to her couch, at least, until the commencement of the second stage. Being up, she can walk about as she may desire; and she thus constantly favors the descent of the child. An additional benefit is derived from the absence of that disappointment which so often follows when a woman is placed in bed long before delivery. Even when she has entered the second stage, it is advisable to permit her occasionally to rise from the couch, not only for the comfort derived from a change of position, but, as before mentioned,

because this position brings into play the power of gravitation, on the part of the child.

The Perineum.

In first labors, owing to the want of distensibility of the parts, laceration of the perineum to a greater or less extent is liable to occur. For this reason, it has been the rule to instruct the accoucheur to support the perineum, with the idea that thus laceration will be prevented. When the head does not bend forward so as to hug, as it were, closely to the arch of the pubis as it is about to pass out, pressure may be made, to compel its extension, and thus far the perineum is supported, but for no other reason. By the best authorities, and by a large number of practitioners, it is believed that such support only serves to increase the efforts of expulsion, and thus more surely to result in the accident which it is desired to avoid. The main cause of a laceration appears to be due to a want of relaxation of the perineum; hence the efforts of the accoucheur should be directed to the promotion of this relaxation. For this purpose, where the rigidity of the perineum is marked, some form of anæsthetic will prove of great value, if given to the point of complete anæsthesia at the moment

when the head is about to emerge. In those instances where, for certain indications, the author has administered chloral in full doses, and where the patient has been completely under its influence, he has never failed to obtain relaxation of the perineum, and the avoidance of any dangerous strain upon it at the moment of emergence.

To accomplish this same purpose, Prof. Goodell lifts up the posterior wall of the perineum by means of the fingers of the left hand, hooked into the rectum, while the head is, if requisite, retarded, and at the same time is compelled to hug the pubis, and follow the curve of the pelvis, by pressure upon it with the thumb, and if needed, with the other hand.

Playfair proposes to accomplish the same purpose by placing the thumb and forefinger of the right hand on either side of the perineum when the head is distending it, and thus it can be pushed forward over the head on the occurrence of each pain, while with the tips of the fingers the too rapid progress of the head is retarded when danger is apprehended.

The Vectis.

When dilatation is complete, but the head is slow in engaging, by reason of a want of dip of that part, the vectis proves of great value. It must always be remembered that this instrument is almost wholly a tractor, rarely a lever, for, as a lever, it becomes capable of great injury, especially when any part of the mother is made the fulcrum. Properly constructed and employed, it gives great power as a tractor, and enables the obstetrician to speedily terminate the labor, where the forceps would otherwise be required. It is easy of application, and is less formidable than the forceps. Of course, it cannot be employed unless the os is dilated, and is almost useless in the absence of uterine contractions. When the head is detained by a want of dip, that is, a greater or less departure of the chin from the breast, the vectis may be employed to bring down the vertex and cause the head to engage. Cases are constantly met with where the anterior lip of the os forms a cap or sling over the head, thus greatly prolonging the labor; here the vectis acts in a manner similar to a shoe-horn, in aiding the passage of the head.

Without the vectis, the physician may do much to obviate this condition. When the head is thus de-

tained, he should insert one or two fingers between the head, and the lip of the os, and aid the latter to slip over the head. Often this is readily accomplished by one or two efforts; but it may become necessary for him to hook the os uteri with the finger, and pull it firmly forward at each pain, and even during the intervals, until the head has emerged from its grasp. This failing, the vectis comes into play.

When it becomes necessary to have a fulcrum, only the hand of the operator should be employed.

The Forceps.

In behalf of the suffering woman, in deprecation of the dangers to which a prolonged labor subjects her, for the sake of the many infants unnecessarily sacrificed, the author would earnestly urge every one who attempts to practice the obstetric art to provide himself with a proper pair of forceps, and then to perfect himself, by thorough study, in their use. Perhaps a large number of women in labor are permitted to suffer hour after hour, without the use of this invaluable aid, simply because the attendant is afraid or unable to employ them, and hesitates to avail himself of the benefit of a consultation, lest he lose credit with his patient and her friends. In

nothing is our selfishness so apparent as when, intrusted with the care of the health and the lives of two beings, of one whose loss can never be made up, and who is truly beyond value, the physician hesitates in the performance of his duty, lest his reputation and his pocket may suffer by it.

At this important moment he should regard duty as paramount to everything. He is watched by eagle eyes; every phase of his conduct, every line of his countenance, is noted. Much, very much, of his future depends upon the report that shall go from that room in relation to his actions. It matters nothing what may be the social condition or position of his patient; she is a woman, in the agony of her most sacred office, her great calling in life, and she demands, and should have, all that skill, science and sympathy can give her.

He who hesitates is lost. For the practice of the "divine art of obstetrics" the physician must be a man of prompt decision. I am not of those who would counsel a resort to instrumental aid when unnecessary, nor is it justifiable to have recourse to it for purely selfish purposes—a tired doctor, who wants his rest! But how often does this aid become an urgent

necessity, and, alas! the medical attendant cannot respond to the calls of suffering humanity.

It is pleasant to note that this valuable adjunct is constantly coming into more frequent use. It is gratifying to know that accoucheurs are learning to look upon the application of the forceps in a far different light from that in which it has hitherto been viewed. The early use of this instrument would undoubtedly have saved many infants reported as still-born, and would equally tend to a more speedy and happy recovery of the woman herself. When a resort to the forceps becomes the rule, in place of the exception, when physicians cease to boast that they "let nature take her course," regardless of what that course may lead to, then will the act of parturition assume a far less dreadful appearance, and one great cause for the avoidance of pregnancy will have been swept away.

Perhaps, also, this delay in invoking instrumental aid is greatly due to the old cry of "meddlesome midwifery," a senseless tradition which has done incalculably greater harm than all the errors of those who have bravely disregarded it.

It may be asked how long we shall wait, or rather, how early we shall interfere? Common sense would

seem to dictate the reply. When the mouth of the womb is fully dilated, or so dilatable as to oppose no obstacle, and no advance has been made for one hour, it is time that help should be extended to the woman, that she may be relieved of her peril. Nor is it advisable, in many instances, to wait this long; as soon as all advance has ceased, particularly when the membranes are broken and the amniotic liquor drained off, then it becomes the duty of the physician to terminate the labor by employing the aid of the forceps.

In this connection many excellent authorities might be quoted, and the evils resulting from prolonged and tedious labor might be given in detail, but this is unnecessary. The physician who has once intelligently applied the forceps, and experienced the pleasure of relieving his patient in a few minutes from what seemed likely to be a labor of hours, will ever after feel himself armed with a new and invaluable power.

Failing or fearing to use the forceps, he seeks to supplement the pains by other means, often of questionable utility, most generally ergot, capable of but little good, and often powerful for harm.

In response to many requests made since the ap-

pearance of the first edition of this volume, the author presents the following views as to the employment of this aid.

As to the form of the instrument: as there can be no advantage in carrying several pairs, and as that form known as the long forceps is always applicable, while the short forceps is useless in cases where the head is high up, the former should be preferred. What is required is the pelvic curve, a curve of the blade fitting the head of the child. And of course, in cases where the head is low down the pelvic curve is not needed; but it comes admirably into play in operations where, the head not having descended, the blade, to assume its proper position and firmly grasp the head, must be carried forward, while the handles are necessarily pressed backward. Without a good pelvic curve the perineum would be put greatly and dangerously upon the stretch, and in many cases the blade could not be properly applied, and would constantly be liable to slip when traction is made. Without going further into a description of the instrument, the author would recommend as suitable forms those known as Bethel's-Davis,' Davis,' Wallace's, Elliott's or Simpson's, and these in the order mentioned.

The operator should remember the work of the instrument. It is mainly to be regarded as a means of traction; to aid the expulsive efforts by traction efforts.

As a means of compressing the head, the forceps should not be employed. Indeed, it is extremely doubtful whether such an effect really can be produced, perhaps not even with the heavy, powerful instruments of former times, and certainly evil results must be expected to follow. But while any effort at compression is carefully avoided, it behooves the operator, in his caution, not to grasp the handles so loosely as to permit the slipping of the blades. Sufficiently firm pressure is needed to retain the instrument in place when traction efforts are made.

Traction must only be made in the line of the centre of the pelvis, very slightly, if at all, from side to side; the plan taught by some, of pulling "from handle to handle," is not only useless, but likely to prove a source of mischief, especially to the soft parts of the woman. In the large number of cases of forceps delivery, firm, careful traction alone speedily accomplishes the work.

To apply the forceps, the woman should be placed on her back, or on the left side, with the buttocks

close to the edge of the couch, even sufficiently so as to project slightly. The position on the back is very generally preferred, though by some that on the side is regarded as better, being less likely to disturb the patient and alarm her.

Preparatory to the application of the forceps, the instrument should be thoroughly warmed, by being placed in a vessel of warm water, and then well lubricated with lard, oil, cosmoline, or any similar article.

The first blade to insert is that one which, when both are inserted, would be next to the perineum. Hence, it is called the lower or posterior blade. The ends of the fingers of the right hand of the operator should be carefully placed between the child's head and the mother's parts; then the blade, held by its handle with the left hand, just in front of the lock, is carefully passed up between the right hand and the child's head, being made to glide along its surface slowly, and without force, letting the instrument find its way, as it were, until it no longer meets with resistance. It may now be regarded as in position, and if the patient is lying quiet, as she should be cautioned to do, the blade may be left to rest against the mother's parts. The other blade is similarly passed, but reversing the hands. The left hand now must be

placed between the head and the pelvic walls, while the blade is passed with the right hand. Both blades are to be carried backward and upward, following the pelvic curve and keeping them closely applied to the head of the child. When in position, the blades will lie snugly together, just as they do when joined outside of the pelvis. When the head is high in the excavation, the handles will require to be depressed, so as to press upon the perineum. Generally, when the second blade is passed, the two fall easily into each other, so that the locking may be readily accomplished; but when the blades fail to lock, by pressing both well back, so that the points may rise in the pelvis, they at once fall into position.

Before attempting the process of extraction, the operator should make himself sure that the head of the child is completely grasped within the blades, as otherwise they may slip, and be the cause of great injury. In the movement of traction, the operator must constantly bear in mind the necessity for the instrument to follow the pelvic curve. Hence the handles should gradually rise in a curve, toward the abdomen, the centre of which curve will be the lock of the forceps. At the same time, unless the head is slipping from the grasp, it must be constantly passing

through the centre of the excavation, and turning, so as to emerge under the arch, and curve up over the pubis. The traction should be made firmly but gently downward and forward, letting the handles rise as the head descends and begins to turn upward over the pubis as a centre.

It will be observed that the author presents no rules for any special position of the head presentation. Nor does he consider it necessary. His view is, that the forceps should be applied in conformity with the walls of the pelvis, which, being unchangeable, will require no variation as to the application of the blades. Passing the blades thus, the head of the child will be grasped in the best position to favor its extraction, which can never be made safely otherwise than in the line of the pelvic curve, technically known as the curve of Carus.

The Placenta.

The child having been severed from its connection with the placenta, the physician should at once give his attention to the completion of the labor by the delivery of the after-birth, which, of course, comprises both the placenta and the membranes.

Many physicians are in the habit of allowing a cer-

tain time, even an hour or more, to elapse before any effort is made to aid in this work. When the womb does not at once close itself and expel the balance of its contents, there can be no good reason for delay on the part of the medical attendant. The patient is generally in great need of repose, which is denied her, and she is kept in a state of inquietude by a nameless dread of trouble yet in store for her.

The advantages of an immediate delivery, and the disadvantages of delay, are so evident that they scarcely need recapitulation. The uterus, relieved of its burden, without any obstruction, is enabled at once to commence the process of involution, and by firmly closing its sinuses, hemorrhage is prevented, and the patient is not subjected to any waste of that vital fluid for which she will have so much need in the performance of her duty as the fountain of life for her offspring. While the placenta remains, clots are constantly liable to form, which, by their presence, give rise to more or less of after-pains as the womb endeavors to expel them. Or the placenta falling across the mouth of the womb, acts as a plug, and is the cause of concealed hemorrhage, often of an alarming character.

In the management of this, the third stage of

labor, the plan of grasping the fundus and body of the womb through the abdominal parietes is the most sure method of accomplishing what is in view. The purpose is not only to remove the remainder of the contents of the womb, but also to leave that organ firmly and permanently closed. In many cases the placenta will be found to have passed from the womb into the vagina, and may be readily removed without further trouble, but, even under the most favorable circumstances, at a glance may be seen the benefit to be obtained by thus causing the womb to contract and close its cavity.

It is almost constantly the habit of the nurse, in the absence of the physician, and, indeed, too often of the physician himself, to endeavor to bring away the after-birth by pulling vigorously upon the cord. This frequently results in the breaking of the cord, necessitating the insertion of the hand within the womb, and without a guide to seek the edge of the placenta; or this traction effort may produce more or less inversion of the uterus, and thus give rise to alarming symptoms.

In this connection, it may be well to allude to the danger of the method so plausibly taught by some obstetric authorities. This plan is to draw upon the

cord with one hand, while two or three fingers of the other are passed up along the front of the cord, pressing it backward, thus causing it to play over a sort of pulley. The theory of these teachers is that the traction is thus made continuously in the line of the pelvic and vaginal curve, and that simple traction would draw the placenta forward against the anterior border of the uterine opening. But those who practice this plan should reflect that the cord in many cases is ready to part its continuity at the slightest pull upon it. Now this method offers an additional inducement for the attendant to exert strong traction upon the cord, and that, too, without the hand outside following the mass as it passes from the uterine cavity.

With firm pressure upon the abdominal walls by the hand of an intelligent assistant, or the left hand of the accoucheur, while the cord is merely held taut, in the great number of cases, the delivery of the secundines will be readily secured.

The late Professor Charles D. Meigs inculcated the necessity, in place of drawing upon the cord and thus pulling the placenta broadside against the opening, rather to reach up one or two fingers to its edge, and

unbutton it, so to speak. This simple but truly scientific manœuvre generally succeeds.

The plan of expulsion of the placenta now known as Crede's method, has been employed by many American practitioners for years. The late Dr. Washington L. Atlee assured the writer that he taught and practiced a precisely similar plan as early as 1853.

The placenta having failed to come away by the use of gentle frictions on the uterus, that organ is found to contract when the fundus and body are grasped as above remarked, with one or both hands, and pressure is made downward and inward. The fibres of the womb firmly contract, and the contents are expelled, like the kernel from the pulp of the fruit when squeezed in the fingers. The most valuable advantage of this procedure is that it excites the womb to a tonic contraction, which is much less liable to be relaxed and allow of subsequent hemorrhage; an additional benefit is that we thus greatly diminish the tendency to after-pains, which, in some instances, prove equal to the pangs of labor.

As the mass exudes, it should not be hastily pulled away, but must be carefully and firmly twisted on itself a number of times as it is withdrawn. This twists the membranes into a rope, and secures a clean

delivery, in place of leaving the torn shreds hanging in and from the parts, to putrefy and give rise to offensive odors, as well as exposing the patient to the risk of this poisonous matter being carried into the blood, there to produce septicæmia.

Those who follow these teachings will find the bugbear known as "retained placenta" rarely, if ever, presenting itself.

The Binder.

We have not yet arrived at the point of omitting this in every case. While many women do just as well without it, and indeed, we might say all, when we consider the usual condition in which it is found within a very short time after its application—like a rope, high up, just beneath the ribs, acting not only as a source of great discomfort, but also as a means of injury to the patient—still, in most cases, it proves, when properly applied, a valuable support to the relaxed abdominal parietes. Generally the woman feels more comfortable to have such support, and care should be taken to have it properly adjusted. When it is pinned, the woman should always have room to fill her lungs to their utmost capacity; otherwise she is compelled to assume the condition of one with a

broken rib, and to employ the diaphragm almost solely in respiration, a proceeding which cannot fail to affect injuriously the abdominal viscera, and, secondarily, those of the pelvis. On the contrary, rest is absolutely demanded for the pelvic contents, that they may recover from the fatigue and strain to which they have been subjected; hence the importance of avoiding any such condition as will expose them to further disturbance. A bandage applied evenly, and pinned so as to afford a gentle support to the abdominal walls, will add greatly to the comfort of the recently delivered woman.

After-Pains.

A most absurd and even dangerous opinion is generally entertained by the attendants, and among these must frequently be included the physician, that after-pains are a necessary accompaniment, with which no interference should be attempted. As before remarked, when, by the proper manipulation, the uterus has been compelled to close itself completely, expelling all clots, etc., as a general rule, the after-pains are but trifling or are entirely wanting. These pains indicate that the womb is obstructed in its involution by the pressure of some foreign body, most generally a clot

or a portion of the secundines. In some cases there would appear to exist a peculiar irritability or neuralgic condition of the womb, which gives rise to these excruciating pains. They are called *dolores cruenti*, or "blood pains," because they are generally followed by a flow of blood, and in olden times were supposed to be necessary, to expel the superfluous blood from the womb.

Whatever be the origin of these pains, the proper remedial means should promptly be employed to dispel them. The patient is already sufficiently exhausted, and it is exceedingly unwise to allow her to undergo any additional suffering. She is also in need of repose, which will be more or less broken and unrefreshing by the constant recurrence of these attacks.

The late Prof. Dewees was one of the earliest to recognize the importance of this matter, and to urge the necessity for relief; he regarded these pains as an evil of great magnitude. Patients will always be observed to convalesce after delivery more rapidly and satisfactorily, when thus relieved, while the contrary is constantly the result of a want of attention to this point. Leishman regards after-pains as liable

to pass into inflammatory disease, and hence, urges the necessity of controlling them.

A careful examination of the parts will reveal the presence of any foreign body, which should at once be removed; this accomplished, some anodyne should be administered, and repeated until complete relief is obtained.

French accoucheurs apply belladonna ointment, and Tyler Smith recommends an anodyne liniment to the breasts, for the relief of these pains. Fordyce Barker prefers Tully's powder, which consists of—

R. Morphiae sulph.,	gr. j.	
Pulv. camphoræ,		
Cretæ prep.,		
Pulv. glycyrrhizæ,	āā	Ḑj. M.

Given in ten-grain doses, and repeated, when required, in four hours.

Almost every accoucheur has a favorite formula; among these we may mention the compound ipecac powder, in doses of ten grains; or laudanum, twenty drops; or paregoric, a teaspoonful; or, morphia, either with camphor water or with syrup, in doses of one-twelfth or one-eighth of a grain. The author has found the latter most excellent; or even better, a solution of chloral and morphia, one-eighth grain of the latter with ten grains of the former, and repeated as occasion may demand.

In purely neuralgic cases Prof. Barker applies chloroform liniment to the abdomen, and gives quinine, in five to ten-grain doses, night and morning. The pains may be regarded as due to neuralgia when they resist opiates, etc., in full doses, and when there is no distention or tenderness of the abdomen, and there is absence of fever or other evidence of inflammation of the pelvic contents.

When the pains are accompanied by flatulence in the intestines, firm pressure on the abdomen gives relief, but the pain at once returns when the pressure is removed. In this condition the most ready relief is obtained from the use of enemata of turpentine, and stupes of the same over the whole abdominal surface. In addition, the internal administration of chloroform and morphia will be useful, say in the following formula:—

R. Chloroformi,	gtt. x-xx.	
Morphiæ sulph.,	gr. $\frac{1}{2}$.	
Tr. opii camph.,		
Tr. cardam. comp.,	āā	f. ʒ ss.
Syr. simp.,		
Mucil. acac.,	āā	f. ʒ j. M.

Dose—To be repeated every half hour or hour, as demanded.

Occasionally after-pains are substituted by cramps, particularly in the legs, which are relieved by the treatment above mentioned.

Additional importance is given to this matter when we reflect that abdominal pain has been regarded and treated as after-pains, or even as the initial stage of inflammation of the pelvic viscera, when it was entirely due to

Retention of the Urine.

Much care is often necessary to ascertain whether the patient has passed the proper quantity of urine, and there is constant liability to unintentional deception.

Whenever there is room for doubt, the physician should not fail to assure himself, by a careful investigation, as to the true state of the case. Instances have repeatedly occurred where the bladder has been enormously distended with but slight discomfort to the patient. The presence of abdominal swelling, particularly when low down, and not of a tympanitic character; pain on pressure, and which also gives rise to a desire to urinate; a constant desire to pass water, though the patient has just performed that act; or a dribbling of water from the parts, should induce the physician to pass the catheter, and thus determine positively the presence or absence of urine.

This condition may occur immediately or may come

on a day or two after delivery, and should be looked for, especially in those cases where the delivery has been tedious; where the head has pressed for a long time upon the pelvic viscera. One complete evacuation of the bladder will often suffice, though this operation may need to be repeated. It must be borne in mind that too long an interval between the evacuations may conduce to increase the trouble, while the complete relief at proper intervals, not to exceed six or eight hours, will aid to a more rapid return of the normal function.

Prior to the employment of the catheter, the patient should be encouraged to make an effort to pass the water. Frequently, this is at once accomplished by her being turned upon her face, with her knees drawn up, or even by lying prone upon the face, with the bed-pan or a sufficiency of napkins placed to receive the discharge. When there are no contraindications she may be allowed to rise and be seated upon the commode, but in all cases must be carefully guarded against a too long or too energetic perseverance in her efforts. The use of warm applications to the abdomen, or placing the woman over a commode filled with steaming hot water, though frequently employed, are of doubtful propriety, being liable to result in too

profuse a discharge from the uterus, exhausting to the patient.

When there is reason to regard the retention as caused by a loss of muscular power in the bladder, a paralysis, due to the severe pressure by the child in its tedious passage, the administration of ergot, say in doses of 15 or 20 drops of the fluid extract, repeated every quarter of an hour for an hour or two, has been found by Prof. Barker to give relief very speedily. The author has in such cases found excellent results from the employment of the tincture of *nux vomica*, in doses of 15 drops every four hours. Perhaps a combination of the ergot and *nux vomica* would produce better results.

The operation of passing the catheter, trifling as it appears, often proves a source of great annoyance, both to physician and patient. It should be performed without any exposure of the parts, except in cases of extreme difficulty. The following simple manœuvre rarely fails to enable the catheter to be passed: pass the right forefinger within the vagina at its anterior portion, and find the urethral canal, which will be felt like a thick cord at this point; draw the finger along this cord to its termination, where there will be a small pit or depression; this is the meatus; insert

the catheter at this spot, and press it gently backward and upward, and it will readily slip into the bladder. Of course, as the catheter is being inserted, its outer end should be plugged, or stopped by a finger kept upon it, to prevent the escape of the urine before the vessel is in place to receive it, or great discomfort will be occasioned to the patient by the wetting of her clothing. Still better, to avoid this, and also to obviate the necessity of the frequent emptying and replacing of the vessel, the author has affixed to the outer end of the catheter a section of india-rubber tubing, of the same calibre as the catheter, and of sufficient length to reach to a vessel placed at the side of the couch.

In the performance of this operation no force should be used, as the end of the catheter might be caught in one of the lacunæ, or folds of the mucous membrane, in place of the opening of the urethra, and great injury would follow a forcible attempt to push it into the bladder. The physician is enabled to assure himself that the instrument has passed into the urethra by feeling it through the walls of that canal, with the finger placed as above; and should no urine be discharged, he may know that the bladder is empty, or that the instrument has failed to reach and pass the sphincter, and, if necessary, a longer one must be used,

preferably, under such circumstances, a gum catheter, which should be passed gently along the canal, and, as it were, allowed to find its way.

After Delivery.

The ancient tradition of the "ninth day," it is gratifying to know, is fast becoming obsolete. Regardless of everything, the woman was compelled to remain in bed until after the ninth day. In many instances this day has been looked upon with terror, as more dangerous than any other. Happily, superstition no longer sways the minds of our patients and nurses, and they are rapidly giving way to common sense views. Under ordinary circumstances, from the very first, the woman may be permitted to change her position as she may desire, from side to side, or to be propped up in bed. After the third or fourth day she may be removed to another couch while the bed is being thoroughly renovated. The constantly recumbent position in the bed, especially during warm weather, is uncomfortable in the extreme, and very provocative of debility. A wise moderation must, of course, be enforced, and the patient must not be allowed to go to the opposite extreme, and exert herself or remain too long in a sitting posture. She should

be made to understand her true condition—with a womb still much larger than natural, its ligaments and the vagina in a relaxed condition, all tending to produce the various uterine troubles to which females are so liable.

No rule in this matter will do to govern all. Every woman must be a law to herself.

Purgatives.

From time immemorial a tradition of the lying-in chamber has been “castor oil on the third day.” This is not only unnecessary, but generally it proves positively injurious. In common with other minor matters, this is usually left to the nurse, and she, regardless of circumstances, insists that the customary dose shall be taken. In the majority of cases there will be a natural action of the bowels within the first few days, and when this does not occur, and indications present requiring an evacuation of the alimentary canal, a mild laxative, as the citrate of magnesia, may be employed.

Uncalled-for purgation increases debility or induces it if not already present; the griping effects of castor oil add greatly to this result. In many cases the

woman suffers from hemorrhoids; and here the oil acts still more unpleasantly.

Hemorrhage.

As this accident of labor frequently occurs after the delivery has been accomplished, that form known as post-partum hemorrhage will be first considered. To insure the most thorough and permanent closure of the uterus at the completion of the delivery is to render the probabilities of after hemorrhage extremely small. When, however, it is observed to occur, examine first as to the state of the womb. If that organ is found like a hard ball, low down in the pelvis, it may at once be inferred that the origin of the hemorrhage is not to be looked for there. Careful examination will sometimes reveal a ruptured blood vessel in the vagina, in the lacerated perineum, or even in one of the labia. While this is not of common occurrence, still it should be sought for when the uterus seems to be properly contracted. When such a source of bleeding is discovered, it may be checked by the application of compresses soaked in some styptic, as the subsulphate of iron. When the hemorrhage is external, this is more readily accomplished. Should a laceration of the perineum be the cause, the

hemorrhage is generally readily checked by the usual sutures introduced, to close such a wound.

When the hemorrhage is the result of a want of tonic contraction of the uterus, prompt efforts should be instituted to secure the permanent closure of the womb. All clots must be removed from the vagina, and from the womb itself, while that organ is excited to contract and expel whatever foreign bodies may be present; when this is successful, in order to maintain the contraction, ergot or quinine should be exhibited, in positive doses, and firm compression kept up over the uterus, either with a compress placed beneath the binder, or by the hand of an assistant. Lest concealed hemorrhage be going on, examinations should be made occasionally, both as to the amount of the discharge and the condition of the womb. Generally, after the first hour or two, the irritation of the nipples by friction, or preferably by the suckling of the child, will aid in maintaining the permanent contraction.

This mode of procedure usually puts a stop to the hemorrhage, and the progress of the patient is thereafter satisfactory; but occasionally this complication assumes a more formidable form; the uterus again and again relaxes, or, as in a few instances, it refuses

to contract, but remains soft, like a wet sponge, allowing the exhausting drain to continue.

It should never be forgotten that clots must be removed, as they only serve to dam up the discharge and provoke the womb to a further expansion of its walls, which, in turn, leads to an increase of the flow. The emptied womb must be crowded down, and held there by the grasp of the hand. When the clots are being turned out of the womb, it is often advisable to let the hand remain within that organ until, like a foreign body, the hand is forcibly expelled by the contractions. While this is going on, frictions, not too rough, should be kept up over the whole of the womb, by the other hand.

Of course, the general condition of the patient must be watched, and stimulants employed, if requisite, to prevent sinking.

Just here, an important point to remember is the danger of fainting; to faint is to stop more or less completely the heart's action, and thus permit the formation in that organ of a clot, sure to produce death subsequently. Now, fainting cannot occur as long as the brain is kept full of blood, and to insure this condition, the head should be placed lower than the body. First, remove the pillow and bolster; then, if necessary,

raise the bed so as to incline the body of the patient with the head pointing downward. After a severe hemorrhage, this position should be maintained until all danger is past. Nor should the patient be allowed to change to a position with the head above the level suddenly, but she must be gradually brought up, lest when all danger seems to have passed her life be again put in jeopardy.

As additional and valuable means of restraining the hemorrhage, we have turpentine, 10 to 20 drops given in emulsion, and repeated every half hour; the solution of the subsulphate of iron may be exhibited in combination with the ergot, in doses of 15 drops each, repeated at the same intervals; oil of erigeron, in ten drop doses in emulsion; and the mineral astringents. Generally, however, when the emergency is great, the action of all these remedies is too slow, and they must only be regarded as adjuvants. Externally, iced cloths or lumps of ice placed upon the abdomen, or the iced douche, will speedily cause the womb to contract. Some have succeeded by the injection of iced water into the rectum, or even into the uterus. Lumps of ice passed into the rectum, or preferably into the uterus, often readily control the hemorrhage.

In critical cases, where all else fails, the question of

the employment of styptics, injected into the uterus, comes under consideration. These act, as a general rule, with wonderful rapidity, coagulating the blood in the sinuses of the womb, and thus closing these gaping surfaces. But we thereby incur the risk of these coagula being carried into the circulation, and thus acting detrimentally, or of their degeneration, and then becoming foci for septicæmia. While there have been many and powerful authorities who deprecate the practice, yet the author does not hesitate to urge this means when the extremity is great and other plans have failed. The hemorrhage is thus certainly checked, and life, which may be ebbing away, is prolonged, if not positively preserved.

Of this class of remedies we have tincture of iodine, tincture of chloride of iron, and best, perhaps, the solution of the subsulphate of iron. Injections of various strengths are suggested; perhaps one part to four of water, and in urgent cases equal parts, may be employed. In using injections into the uterus, the utmost care must be taken not to throw air in at the same time; hence the syringe-pipe should be carefully filled two or three times previously to its passage into the womb. Of course, all clots should have been cleared from the womb before the injection. The hemor-

rhage is checked here solely by the formation of clots or coagula in the mouths of the uterine vessels, and as contraction would cause them to be detached and expelled, all pressure upon the abdomen, and efforts to cause contraction of the womb, must be carefully avoided.

A recent procedure, and one greatly extolled, is the injection into the womb of water, at a temperature of about 120°. It is regarded as especially useful in cases where the womb contracts and relaxes. Being always at hand and easy of application, this method demands attention, and would seem to promise good results with less risk than any other form of intra-uterine injection.

Prof. Penrose has found that common vinegar acts with the most positive effect in checking post-partum hemorrhage. He saturates a rag with vinegar, passes it into the uterine cavity and squeezes it. He claims that this procedure rarely fails to stop the flow immediately.

Dr. H. P. C. Wilson, of Baltimore, urges the introduction of the hand within the uterus, and raking the surface which has been occupied by the placenta with the finger-nails. He says that no further hemorrhage occurred, though the uterus did not contract

and its mouth remained open for nearly an hour after this operation.

When free hemorrhage occurs PRIOR TO THE DELIVERY, it may depend upon the presence of placenta prævia, the detachment of the placenta from its position even when not prævia, or the rupture of a large vessel, which latter may be expected in those cases where varicose veins are observed to be abundant upon the thighs, etc. Here we have reason to believe that the same condition exists within the labia and vagina, and some of these vessels may have been ruptured.

Under all circumstances, when, from the undilated condition of the os, or from any other cause, the labor cannot be speedily terminated, the vagina may be plugged, which will check the flow and give time for reflection. The best means for this purpose is the colpeurynter, which is easy of introduction, and is as easily removed, either entirely or partially, to permit of an examination of the parts. It has the additional advantage of acting as a dilator, and thus preparing the parts for delivery. It is well to remember that this air bag, as it is also very wrongly called, should be filled with water, and never with air. For should its walls give way, the air would be

forced with great power directly into the uterine veins, and a fatal result would almost inevitably follow.

In the absence of this instrument, rags may be used to plug the vagina, and if necessary, the first of these may be saturated with some styptic. The latter would be particularly useful if the hemorrhage were from a ruptured vessel in the vagina.

Of course, the patient must be placed in a horizontal position, and be kept cool and quiet. Where the hemorrhage is not great, this alone will often cause its cessation, at least for a time. But the utmost vigilance must be observed, lest the hemorrhage should suddenly recur, and proceed to an alarming extent in the absence of aid. With the colpeurynter at hand, the attendants, who should be properly instructed in its use, can readily check the flow. In these cases delivery must be looked to for permanent relief. When the os is in a condition to permit the passage of the child, the rupture of the membranes will temporarily check the hemorrhage, and the delivery may be accomplished by any of the appropriate means.

When the placenta is more or less before the way, the hemorrhage is best controlled by introducing the fingers, or the hand, if necessary, and detaching com-

pletely that portion of the placenta which is already partially separated, and from which the hemorrhage proceeds; the membranes should next be ruptured, and the presenting part will come down and form a plug, which, for a time at least, stops the drain; time is now allowed for the pains to deliver, or if necessary, the forceps may be applied. In all such cases full and permanent uterine contraction should be insured by the use of an oxytocic.

In the absence of the forceps the delivery may be performed by turning. Nor is it necessary to wait until the os is fully dilated. At the moment when dilatation is sufficient to permit the passage of the hand, to reach the feet, the effort should be made to bring down one or both feet.

A guarded prognosis relative to the child should always be given, as in the majority of cases its death is certain.

Convulsions.

The limits of a work like this will not admit of any attempt at a full exposition of the causes for, and the kinds of, convulsions liable to attack the pregnant or parturient female.

The author, merely wishing to prepare the practitioner for the emergencies of the obstetric art, must

content himself by indicating the resources at command under such circumstances.

Unfortunately, the physician is generally not aware of the approach of this complication until, like a clap of thunder, it bursts upon the startled attendants in the lying-in chamber. Such an attack may be anticipated when the patient shows unusual symptoms of drowsiness, complains of headache, interference in vision, noises in the head, or even exhibits a marked and sudden change from her natural amiability to great irritability. In short, the physician should view with anxiety the occurrence of any unusual symptoms, and particularly so when there have been previously much swelling of the feet and hands, and puffiness of the face.

With such a manifestation, a full dose of bromide of potassium, thirty grains; or, of chloral, fifteen grains, or both combined, as circumstances dictate, will often mitigate these symptoms, and carry the patient with safety to the termination of the labor.

When a convulsion does occur, procure a cessation of the attack by inhalations of ether or chloroform. At the same time, enemata of chloral, xxx to xl grains, may be thrown into the rectum. The spasm having ceased, prepare to deliver as speedily as may

be. The bladder must be evacuated, if necessary, by the catheter, and the rectum by stimulating enemata, and if there has been previous constipation, free purgation should be obtained by the appropriate remedies. Perhaps the best article to meet this indication is Croton oil, a drop or two of which can be placed upon the tongue, and generally acts very promptly.

Revulsives may be employed, as cold affusions to the head, mustard baths to the feet and limbs, sinapisms to the whole length of the spine. So soon as the patient can swallow, if there be the slightest indication of a return of the spasm, give full doses of chloral, xv grains, by the mouth, and repeat every hour, as may be necessary. This rarely fails to counteract the convulsive tendency.

The most profound quiet must be enforced. Vaginal examinations should be made as seldom as possible, unless the patient is under the anæsthetic influence.

As efforts to produce dilatation are extremely liable to reproduce the convulsions, the use of the dilator is of doubtful propriety. Doubtless, free venesection, in appropriate cases, would prove of value, but such cases are more rare than would be supposed. It would be the height of absurdity to bleed a patient already

anæmic. Such an operation could only be justifiable in cases of plethora.

The action of the anæsthetics, and especially of the chloral, while checking the spasms, tends to procure full dilatation of the mouth of the womb, and the moment that this has occurred to an extent sufficient to permit of the passage of the forceps, that aid should be invoked. When the breech presents, or when, for any reason, the use of the forceps may be inadmissible, the feet should be brought down and the delivery thus accomplished.

With the delivery, the complete emptying of the womb, generally every untoward symptom disappears. Should the reverse obtain, continue the chloral and other remedies, as they may be indicated.

It is preferable to give chloral in a dose of xx-xxx grains at first, and repeat every half hour or hour, in xv grain doses, until the spasm is relaxed and calmness or sleep follows.

During the convulsion, care should be taken to prevent the patient from injuring her tongue, by the insertion of a cork or pad between the teeth; and by gentle restraint she should be kept upon the bed, and not allowed to suffer injury by forcible contact of her head or limbs with any portions of the couch, etc.

Breech Presentation.

Perhaps no complication of labor is so terrifying to the young obstetrician, and, it may be added, also to very many who can no longer be classed as tyros in the art, as that in which the delivery of the head follows the body. The reasons for this dread need scarcely be discussed. Generally, the delivery is greatly retarded ; then the probability of the death of the child adds much to the discomfort of the accoucheur, who early recognizes the dangers, while he is not always able to apply a remedy.

Here, as in all other forms of labor, the general principles, as before mentioned, apply with still greater force. When the labor has fully commenced, the physician should remember that he does not have the advantage of the firm wedge, as in a head presentation, to aid in the dilatation of the os uteri ; hence, he may very properly and profitably call to his aid the invaluable chloral, which always acts so beneficially in procuring the relaxation of the circular fibres of the mouth of the womb. Especial care should be had, not, by any inadvertence, to rupture the membranes prematurely, as thus is lost one great aid in promoting the full dilatation, while the child is exposed to greater

danger, by reason of the compression of the cord, and the almost certain cutting off of its blood supply.

But when the rupture has occurred, every effort must at once be made to promote a speedy termination of the delivery. Still, let nothing be done hastily or without due consideration. Should the breech descend without delay, all is well, no interference is demanded. But when the descent is delayed, it is justifiable and proper for the accoucheur to bring down one leg, which almost invariably will, by this much reducing the volume of the mass occupying the outlet, enable the delivery to go on with more rapidity. The labor is now more at the will of the accoucheur, who can employ traction as it becomes necessary.

The condition of the child must ever be the index for the action of the physician. When he perceives that the life of the infant is endangered by further delay, he may aid the descent of the body by traction upon the leg or legs, or by the application of the blunt hook in the groin, at the same time having firm compression made above, upon the womb, to give an additional propelling force to aid in the expulsion of the uterine contents.

As the child comes down, the pressure upon the cord becomes more positive, and if possible a loop of

it should be drawn down and so placed as to relieve it as much as may be from pressure. This loop also will serve as a means by which constantly to indicate the condition of the fetal circulation. In a number of instances the forceps have been applied to the breech, and gentle traction has thus been made. Still, this is a means from which but little can be anticipated, and if unskillfully employed, would be capable of resulting in great injury to the delicate bony structure of the fetal pelvis.

In the absence of the blunt hook, or sometimes preferably, recourse may be had to a fillet or band passed over the bend of the leg at the groin, by which the proper amount of traction may be made. Occasionally, the difficulty of passing such a band necessitates the use of a gum catheter or bougie, or the little instrument with an eye, on the end of a watch spring, often employed for plugging the posterior nares, in cases of epistaxis.

As the body is brought down, it must be remembered that the arms are very liable to slip up alongside the head, and thus greatly add to the complication. One or more fingers may be passed up, and the child's arms successively hooked and brought down,

taking care to sweep them across the body, and thus obviate the danger of their fracture.

The body having been delivered, the final difficulty is with the head. Often, by reason of incautious haste in bringing down the body, the chin has been caused to depart from the breast, and the head thus placed in the most unfavorable condition for its passage. This should be an additional reason for care in the efforts made to hasten the birth.

Of course, the physician now recognizes the fact that every moment's delay adds to the probability of the death of the infant. He should at once pass one or more fingers up to the child's face, if possible, passing a finger on either side of the nose, and thus endeavor to draw down the face and cause it to rotate out over the perineum, or the finger may at least be passed into the mouth of the infant, and the chin thus hooked down. While this is being done, firm traction must be made on the body, and aid given from above, by abdominal compression.

This abdominal pressure serves an additional purpose, as frequently, in breech presentations, the uterus is left in a relaxed condition, and the delivery is liable to be followed by flooding.

When the head is still delayed, the forceps must

be employed. This is accomplished by bending the body of the child up over the mother's abdomen, and applying the blades as usual.

Artificial Respiration.

Having delivered the child, it becomes the duty of the accoucheur to see that its respiration is fully and freely performed. When there appears a hesitancy in this act, the child may generally be readily excited to inspire fully by a sudden dash of cold water upon its body, by a few vigorous slaps upon its buttocks, or by spurling brandy from the mouth of the physician over the breast of the child, or by alternately plunging it, first into a warm then into a cold bath. In every case the mouth and throat should first be carefully cleared of mucus or other foreign matters that may tend to obstruct the influx of the air.

Should the child present an apoplectic appearance, the umbilical cord must be divided and permitted to bleed; at the same time the limbs should be rubbed, to promote the circulation of the blood. In the hurry and excitement of the occasion the physician should not forget this untied condition of the cord, as instances have repeatedly occurred where such neglect has resulted in the death of the child fr

hemorrhage. Therefore, he should, as soon as possible, carefully tie the cord, even though the respiration and circulation have not been fully established.

It is not advisable to wait long for success by these methods, but rather to put into execution that which promises more certain benefit, artificial respiration. Several methods have been proposed by which to imitate the natural play of the respiratory muscles. Perhaps the best mode is to place the child upon its back, with its shoulders rather higher than the body, and then grasping the arms, the physician pulls them up over the head, thus drawing up the ribs and creating a vacuum in the lungs; then he brings them down again to the sides, pressing gently upon the chest, as it were, to expel the air. By these movements, repeated six or eight times a minute, he endeavors to imitate inspiration and expiration.

Nothing, however, can be so effectual as the "mouth to mouth method"—direct insufflation of the lungs. The infant having been prepared as previously directed, the operator places his mouth to the mouth of the child, and blows the air directly into its lungs, the child's nose being held, to prevent the escape of the air by that channel. The chest is then pressed on each side, to expel the air, and these movements are

continued alternately. Another plan is the passage of a gum catheter into the trachea, through which the air may be blown into the lungs, from which it is again expelled by compression on the sides of the chest, repeating these movements alternately, about six or eight times a minute. This plan is especially useful when there is evidence of the presence of foreign bodies in the air passages, for it is comparatively easy to remove such by sucking through the catheter. The presence of the catheter itself often acts to produce spasmodic efforts at inspiration.

As artificial respiration has been repeatedly known to succeed, even after a long time had elapsed prior to the child's showing signs of life, these efforts should not be too readily abandoned, and particularly, so long as there is present any evidence of action of the heart. It is worth while, unless positive evidence to the contrary is present, to continue such efforts for at least one hour. While these methods are being employed, the child should be kept warm, and in some cases good results have followed the use of stimulating injections into the rectum.

The author would take this opportunity to caution the physician against too readily giving a certificate, or opinion, that a child has been born dead. He

should remember that a child is not born dead, even though it has never breathed, if there is the slightest evidence of life at the moment of delivery. More particularly would this hold good when the heart's action is shown by pulsation, however feeble, in the cord, and *a fortiori*, when the heart or large vessels are felt to pulsate.

Several instances have occurred where heirship has been decided in accordance with the above.*

Nourishment of the Woman.

It is gratifying to chronicle the fact that a great change has been observed relative to the nourishment of the woman after her accouchement. It was formerly regarded as highly dangerous to allow her anything but the lightest diet, and even yet there is too much systematic starvation. Already exhausted by her efforts, loss of sleep, and loss of blood, she rather demands a full diet—at least, one which will enable her most readily to recuperate her forces. A woman should not be starved because she has just given birth to a baby. Long experience in this matter has demonstrated the benefits to be derived from the proper nourishment of the lying-in woman, and the positive

* See "Evidence of Life in the Newly-delivered Child," by the author.

injury resulting from an opposite course. Parturition, other things being equal, is a natural physiological process. Hence there exists no sound reason why a recently delivered woman should be starved or half dieted on water-gruel, or weak tea and dry toast, for days, and then gradually, even fearfully, be permitted to return to her usual regimen. Even in a perfectly normal labor there is more or less exhaustion, loss of blood and of nerve force, and generally, the woman craves food, her system instinctively demands it, and her digestive organs are prepared to accept and assimilate it, in order to make good the loss she has undergone. Perhaps the earliest obstetrician to take this common sense view was Denman, who immediately adopted for the woman a diet similar, in all respects, to that used by her previous to delivery.

As there is yet observable a great tendency to hesitation in the adoption of this course, perhaps a few quotations from the views of recent authorities will aid in enforcing this belief, especially among those who still practice obstetrics according to the dogmas of their venerable teachers of a past, almost unenlightened age.

Leishman says: "The old method of treatment by starvation during the first few days, when the diet was

confined to tea, water-gruel, or arrow-root, finds few if any supporters at the present time. Nothing, indeed, could be more irrational than such treatment, or more likely to retard recovery and discourage the lacteal secretion, so that it will be quite proper after the first day, at least in the great majority of instances, in which the patient has had some sleep, to give chicken soup or beef tea, in addition to dry toast, gruel, or arrowroot and sago, which are properly given at this stage, as being substances easy of digestion."

Schröder says: "Immediately after delivery there is little or no appetite, and therefore broths, soups, an egg and some bread, are sufficient. As a beverage, milk is to be recommended. If the woman, however, should have an appetite, she may have sufficient meat, and on the following days also some vegetables."

Fordyce Barker, says: "The theory that a puerperal woman is in an inflammatory condition, or in a state predisposed to inflammation, has in a great measure governed the profession, and has been inculcated by most of the obstetric authorities from Celsus down to the present time. They have consequently taught that a puerperal woman should be restricted to what was termed an antiphlogistic diet. * * * At the present time a change of practice, more in

accordance with sound physiology, reasoning, and good sense, is rapidly taking place. * * * Is not the theory a strange one, that the organs connected with parturition will be more rapidly restored to their condition prior to conception; that the metamorphosis of tissue called involution will be more easily and effectually accomplished, and that the new function of lactation will be more surely and perfectly established, by depriving the system of its accustomed alimentation?" He continues: "I cannot doubt that in all ages there must have been some whose practice was governed by a sound intuitive judgment and good sense, and who have therefore freed themselves from the fetters of professional tradition, and followed a rule similar to that inculcated by Denman. I should say, in general terms, give the puerperal woman as good nutritious food as she has an appetite for and can easily digest and assimilate. You will at first find many nurses who will not accept these views, and they may fail to fully carry out your directions in this particular; but my experience has been that after a time the intelligent ones become enthusiastic converts to this course. The woman, exhausted by labor, first needs rest. This gained, as soon as she shows any desire for food give that which is most

acceptable to her and which will best sustain her, a cup of good clear beef soup, or of chicken or mutton broth. There are those whose instincts and habits lead them to prefer a cup of tea, or gruel, or panada. Very well, only insist that they take enough; then, as soon as the appetite will permit, guided only by this and the general condition of the woman, and not by the question of time, whether it be the third or the ninth day, gradually give solid food, as birds, poultry, tenderloin of beef, or a mutton chop. * * * By following this course of regimen I believe you will find that your patients rest and sleep better, and their functions are established with less disturbance than they would be with a spare or insufficient diet. * * * The function of lactation is thus generally established without that disturbance of the system which was called milk-fever, and was formerly so common. It is certainly more in accordance with sound physiological principles to feed puerperal women upon easily digestible, nutritive articles, than to administer that which contains but little nourishment and a larger amount of indigestible residue. There are many puerperal diseases mainly due to exhaustion and inanition. In short, I will say that I have seen much suffering and many diseases in puerperal women, where one of

the chief elements was defective nutrition; but I have never seen the slightest evil result from good, ample, judicious alimentation."

The value of milk as an article of diet for the nursing woman has been most forcibly shown by the experience of Dr. Robert P. Harris of Philadelphia, as detailed in a paper published by him in the *American Journal of Obstetrics*, Vol. II, p. 675. This article of food should be given in addition to the other diet, and partaken of in small quantities frequently repeated. Chocolate, cacao, and broma, made with a large proportion of milk, generally prove of great value in similar cases, and should always be employed prior to the abandonment of all efforts on the part of the mother to nurse her infant.

Nourishment of the Child.

The proper nourishment of the child, in its first days of extra-uterine life, demands the special attention of the physician. As soon as the mother is rested from her fatigue, say in three to five hours, according to the attending circumstances in each case, the infant should be put to the breast. Unfortunately, in many instances, some officious attendant has already administered sugar, or molasses and water, catnip tea, or some of

the numerous abominations of the lying-in chamber, and the child, surfeited or sick, is illy prepared to make the proper efforts to grasp the nipple and exert its powers of suction. This is contrary to the teachings of nature, and should be strictly prohibited.

Rigby justly remarks that "it is a general practice not to apply the child to the breast until the second or third day, upon the plea that there is no milk; a more erroneous and mischievous plan of treatment could not be devised, for it is a fruitful source of much injury, as well as suffering, both to the mother and her child. The child should be put to the breast whether there be signs of milk or not."

Before leaving his patient, it is the duty of the accoucheur to caution her and her attendants against this grave error, and to explain to them, carefully and fully, the reasons and the necessity for the early application of the child to its mother's breast. Many of its future indigestions, its colics and diarrhœas, its sleepless nights and whining days, depend upon the action of its care-takers in its early hours of life. Nature intended the mother's milk, and nothing else, as the food for the infant, and when the necessity for any other nourishment does arise, it is always to be regretted, and will, in the vast number

of cases, result in the ill-health and early death of the infant.

Another and a great advantage obtained by attention to this point is, that an early secretion of milk is thus made probable, and there is also less liability to trouble with the nipples. Before the milk has been secreted the breasts are flaccid, and the nipples are more easily drawn out, and thus prepared for their function. Whereas, when, from any cause, the child is kept from the breast until later, and distention is great, the nipple is retracted, and suction is difficult, and the child, meeting with these obstacles, quickly becomes discouraged, and can with difficulty be induced to continue its efforts. Or, by the vigor of its attempts to obtain the needed supply, the nipples become excoriated, and thus an additional trouble is produced. A point that may be made an efficient aid with the nurse and others, is the fact that the first milk is of a peculiar nature, prepared especially to act as a purgative to the child, and thus cleanse its alimentary canal of the tarry matter which it contains. This again obviates the necessity of a resort to castor oil and other dosings, so habitually exhibited to the child in its first days. In this connection, it would be well to remember that the proper charge should be

given to the attendants as to the absolute avoidance of all medicaments, except by the advice of the physician.

Of course, as in everything connected with the parturition, due discrimination must be made; as, where the nipples are already in a tender condition, it would be well to postpone the efforts at suction until the lacteal secretion has really commenced and flows readily.

Prof. Barker regards the early application of the child to the breast as an important prophylactic measure against milk fever.

The proper food for infants who are deprived of their natural aliment should be that which will most nearly assimilate the mother's milk. Hence, cows' milk, properly prepared, is generally preferred.

The author does not regard the limits of this book as allowing the introduction of this subject in full, but will refer his readers to his paper on Artificial Food for Infants, which he hopes shortly to give in a companion volume, "Hints on Children."

Sore Nipples.

This, which often serves to discourage women from nursing their infants, is generally the result of delay in allowing the child to suck, as before mentioned, and also from a want of attention to the parts during pregnancy. Much may be done in the latter months to prepare the nipple for the performance of its function. Thus, when it is depressed, it should be gently drawn out with the fingers or the breast pump, at least once daily. At the same time, the application to it of a weak astringent, as alum, borax, or tannin, dissolved in rose water, or cologne water, or alcohol and water. These lotions strengthen and harden the delicate covering of the nipple.

After the birth of the child great care should be observed to prevent soreness of the nipples, by the utmost cleanliness; by protecting them from pressure or injury; by carefully washing and drying them after each time of suckling, as otherwise a portion of the woman's clothing would be likely to adhere, and its sudden careless removal would tear away a portion of the skin. Moisture, alone, on the nipple, is extremely liable to produce chapping.

When, in spite of every care, the nipples become sore, this may arise from a variety of conditions; we

may have cracks only at the base; or the nipple itself may be inflamed, abraded or ulcerated to a greater or less extent. Each of these gives rise to great suffering at every attempt of the infant to nurse.

The most common form is a chap, or tearing off of a small portion of the skin. In the interval of nursing a small scab forms over this minute raw surface, only to be removed by the next suckling. This may continue until it results in ulceration to a greater or less extent.

The initial trouble can generally be relieved by the use of some mild astringent, as a strong infusion of tea leaves, lotions of borax, tannin, alum, sulphate of zinc, one grain to one fluidounce of water, tincture of myrrh, etc., carefully applied after each act of nursing, the nipple having been previously cleansed and dried.

Resting the nipple and giving it an opportunity to heal by protecting it with the nipple shield, will aid greatly in the cure.

When the affection is more severe a variety of remedies have been recommended. Many practitioners prefer the nitrate of silver, in pencil, or better, a very strong solution, say 80 to 100 grains to the ounce, carefully applied with a fine brush. This forms a

coating over the eroded surface, and when this falls off the parts are generally well.

In order to form an artificial coating over the raw surface, some use collodion, but perhaps the best article is the compound tincture of benzoin, painted over the part several times, allowing a slight interval for each coat to dry. As this is more or less broken and detached by the sucking of the child, it should be renewed after each act of nursing.

Other favorite applications are the nitrate of lead in glycerine, 10 grains to the ounce; the glycerite of tannic acid, to which Playfair adds sulphurous acid thus:—

R. Ac. sulphurosi,	$\frac{1}{2}$ part.	
Ac. tannic. glycerit,	$\frac{1}{2}$ part.	
Aquæ	1 part.	M.

Cracks are best treated by the application of the solid nitrate of silver, carefully, over the raw surface, and the part then covered with collodion, or anything which will protect it.

When inflammation of the nipple is present, as shown by the usual symptoms of pain, heat, redness and swelling, this condition must be relieved by any form of mild poultice, followed, when necessary, by lotions of laudanum and lead water. Where the alco-

hol of the laudanum proves irritating, the aqueous extract of opium may be used.

Fordyce Barker gives this formula:—

R. Ext. opium aq.,	f. ʒj.
Liq. plumbi diacetat dil.,	f. ʒss.
Aq. rosae,	f. ʒiiss.
Ft. lotion.	

Applied on one or two thicknesses of linen.

It must always be carefully impressed on the nurse that the utmost care must be taken to sponge off, with warm water, any of these applications, prior to permitting the child to nurse.

Retracted Nipple.

Should the nipple be so drawn in that the child is unable to grasp it, or can only do so with great difficulty, an effort must be made to draw it out. Sometimes this is readily accomplished by manipulating it with the fingers; more surely, however, is success obtained by the use of a breast pump. In the absence of the latter, a domestic measure is the use of the common clay smoking pipe, or the application of a bottle previously exhausted of its air by any of the usual methods. The areola should invariably be well anointed prior to any of these applications, lest additional trouble be caused by the abrasion of its delicate surface.

Where difficulty still exists, the child may be taught to nurse through a nipple shield. In the intervals of nursing, a shield without the artificial nipple should be worn, to protect the part and favor its elongation.

The Lochia.

The discharge which occurs subsequent to delivery varies greatly, both as to different patients, and even with the same woman in different deliveries.

Great care is always demanded, so that when this becomes too abundant, or offensive, it may at once be corrected. Covered up as the woman generally is, in a superabundance of clothing, any offensive odor is apt, at first, to be hidden, until the patient becomes offensive to herself. The parts should be carefully cleansed every day, and it is never amiss to use an injection, for this purpose, of a weak solution of chlorinated soda, or carbolic acid, or permanganate of potassa, etc. When, in spite of this, or in its omission, an offensive odor is observed, the injection should be employed two, three or more times a day, and much stronger, for instance:—

R. Liq. sodæ chlor.,	f. ʒi ss.
Aquæ,	f. ʒviiss.
R. Ac. carbolic.,	f. ʒi.
Glycerin.,	f. ʒi.
Aquæ,	f. ʒviij.
R. Sodii carbolat.,	f. ʒi ss.
Aquæ,	f. ʒviij.
R. Potassæ permanganat.,	f. ʒi ss.
Aquæ,	f. ʒviij.

Care must be observed in the employment of these washes, that they should not be used when smarting or pain follows, but the quantity of water should be increased until this result is obviated.

It has been proposed, with excellent reasoning, that the woman should daily assume a position so as to facilitate the discharge of the lochia—as when she rises to obey the calls of nature; where for any reason this is contraindicated, she may at least assume a position in bed, on her knees, or prone upon her face.

When the discharge continues of a decidedly sanguineous hue for too long a period after the delivery, and the womb is found still occupying a position high in the pelvis, thus showing that it remains yet much enlarged, it is well to promote the process of involution by the administration of the agents previously suggested—ergot and nux vomica—and when there is

evidence of debility, iron and quinine may be usefully added.

Milk Fever.

Amid the traditions of the lying-in chamber may be found one almost wholly due to ignorance of the proper care necessary for the parturient woman. It was always expected that when the secretion of milk had fairly commenced there should be present with this truly healthy act a fever of greater or less magnitude. It was supposed to result solely from the excitement of the system incident to the formation of milk. Hence, when fever occurred about the third day from delivery, its origin was at once assigned to this as a cause, and frequently valuable time was wasted before the true nature of the exacerbation was discovered. Milk fever may now be regarded as a legend no longer to be believed in, and whenever fever presents, its true cause and nature must at once be ascertained. Under the old plan of starving the woman, permitting the continuance of agonizing after pains, delaying the delivery of the placenta, allowing the delivery itself to drag wearily and uselessly on for hours, even days, can we wonder that the setting up of a new function like that of lactation should

produce a feverish condition? When we add to this the foolish purgation on the third day, regardless of its necessity, and the equally foolish habit of not applying the child to the breast until the third day, we certainly present a sufficient array of exciting causes. All recent authorities agree that under the wiser plans now almost universally adopted, the so-called milk fever has become the noted exception rather than the rule. Some authorities insist that no amount of fever is caused by the process of lactation, and that in every case where fever occurs, it is due to septicæmia or other causes.

When fever occurs then, the physician should carefully investigate as to its possible causes

When we find the breasts hot, swollen and tender, and a moderate increase of the temperature generally, believed never to exceed one degree above the norm, preceded by slight rigors, headache, usually with constipation, we may regard the disorder as due to the effort to establish the lacteal secretion, and treat it accordingly. In the large majority of cases, great, even permanent relief is speedily obtained by emptying the breasts, particularly when this is not accompanied by exhausting and irritating efforts on the part of the mother to get the child to nurse.

When these symptoms persist, a mild laxative, the best would be a saline, may be given, in order to move the bowels, and the feverish symptoms may be allayed by any of the ordinary diaphoretic febrifuge mixtures.

When the breasts are quite painful and swollen, they should be carefully rubbed with warm castor oil, at short intervals, and never allowed to remain distended. If the child is not able to empty them, the breast pump or other means must be employed. Other indications may be met as they arise.

The Infant.

Since the issue of the first edition of this work the author has been urged, by many practitioners and students, to give in a similar form his views as to the care of the infant and the diseases or accidents to which it is most liable in the first months after birth. Contemplating, as he does, the preparation of a companion volume on children, he proposes here to give briefly some account of the dangers to the child incident to or shortly after delivery.

The Cord.

The complete delivery of the child having been accomplished, the attention of the accoucheur should next be directed to the cord. Unless adverse indications present, the cord should be tied and its connection with the placenta severed, without delay. Though this is apparently a trifling operation, yet when carelessly performed it may be productive of very grave results, even the death of the infant. For the ligature, any material will do that is capable of resisting a strong tug and of knotting closely and firmly. What is known as bobbin, a fine kind of tape, is best, but we may employ lamp wick, several thicknesses of spool cotton, shoe string, in short, anything which will fulfill the above indications.

The ligature should always be applied at a little distance from the child, say the width of three fingers. Before drawing the knot tight, let the physician carefully examine, lest he include a portion of the intestine, as might be the case where umbilical hernia were present. This projection of a portion of the intestine into the cord is one reason why the ligature should not be applied close up to the abdomen. In tightening the ligature, it should never be done with a jerk, but slowly, guarding, lest, by the sudden breaking of the

ligature, the cord be torn from its insertion into the abdomen. The ligature firmly applied, the cord may then be divided, about one finger's breadth from the ligature.

In every case it is well to examine the cord again, prior to leaving the case, as then it will be known, should the knot have slipped, or hemorrhage, from any cause, be going on. A frequent cause of slipping, and of subsequent hemorrhage, is a jelly-like condition of the cord, which prevents the ligature from compressing the severed vessels. Here, nothing remains but to cast on a new ligature, as generally there has been a shrinkage of the cord, and firmer compression may now be made.

When the presence of a twin pregnancy is known, or suspected, two ligatures must be applied, and the cord divided between them. Some accoucheurs always apply two ligatures; this plan secures more cleanliness, but it is believed that to a certain extent it interferes with the early delivery of the placenta.

A most excellent plan, when the cord is loaded either with blood or jelly, is to cut it, and before tying the ligature, grasp it close to the abdomen, and then carefully compress it toward the cut end. This largely removes the blood, etc., makes more secure the appli-

cation of the ligature, and at the same time facilitates the drying and fall of the cord.

The stump should never be loaded with rags, grease, etc., by way of dressing. All that is requisite is to place between the stump and the abdomen a sufficient thickness of rag to prevent its contact with the delicate skin of the child.

Hemorrhage from the Cord.

This may be due to the tearing of the cord, relaxation of the ligature, or a hemorrhagic tendency. The second form is readily recognized, and generally as readily controlled by a proper application of the ligature.

When the cord has been torn, so that the hemorrhage occurs from its abdominal insertion, the most sure method of checking the flow is to gather up the integuments, down to the muscles, and insert two hare-lip pins, at right angles across the mass, then tie a figure of 8 suture over each, or pass the ligature beneath each of the needles, and thus ligate the mass. In many cases, the hemorrhage may be controlled by powdering the surface profusely with subsulphate of iron, or by the use of some other styptic, but the ligation of the mass is most sure to succeed.

Occasionally, hemorrhage follows the formation of

FUNGIOUS GRANULATIONS after the cord has fallen. When these are small, and the hemorrhage is not great, they may be snipped off with a pair of scissors and the surface touched with nitrate of silver. When these granulations are large, a ligature should be passed around the base and the mass then cut off.

That form which occurs from the hemorrhagic tendency is, while almost always fatal, yet fortunately quite rare. It may commence a few hours after birth, or not appear for days or even weeks subsequently. It usually begins by an oozing of blood around the root of the navel, which may continue thus, or it may speedily become a true hemorrhage, and as it progresses, the blood exudes from the mucous surfaces, the finger nails, etc. Along with this, there often are ecchymosed spots, or a general purpura.

As this train of symptoms is the evidence of a great want of coagulability of the blood, the treatment must consequently be constitutional as well as local. Locally, we may employ styptics, such as the tincture, the nitrate or subsulphate of iron, by means of a compress over the navel, or along with plaster of Paris. The safest, however, will be the ligature in mass, by means of the needles, as before mentioned, and then the application of some styptic freely around the

bleeding part. Should this arrest the hemorrhage, it should not be removed for several days, and then very guardedly, and the part dressed with an emollient poultice, until all the foreign matters have been removed.

The constitutional treatment will consist in the administration of the mineral acids, tincture of chloride of iron, ergot, nourishment and stimulants.

Caput Succedaneum, Etc.

Occasionally, when the delivery is accomplished there is observed a swelling, greater or less, upon the head of the child, at the point by which it has presented. The name of caput succedaneum is given to this, when it is produced by an extravasation of blood beneath the scalp. It is caused by the prolonged pressure upon the child's head during its passage through the pelvis. The swelling is soft and painless, and generally disappears in a day or two. No treatment is necessary.

More rarely, blood may be effused beneath the pericranium; it is then known as a CEPHALÆMATOMA. As the blood coagulates more or less, touching the edge of the swelling gives the remarkable sensation as though a fracture of the bone had occurred, with sub-

sequent depression. Absorption takes place here with extreme slowness, and many months may elapse ere it entirely disappears. Sometimes the swelling increases for a few hours after birth, and in rare cases suppuration has been known to occur. In this event the pus must be evacuated.

As in the other form, no treatment is required, unless inflammation should occur, when it should be treated by poultices, etc.

Conjunctivitis.

A more or less inflamed condition of the eyes often occurs, generally beginning on the third day. The first symptom is the sticking together of the eyelids, soon followed by redness and swelling; an examination shows the conjunctiva inflamed, and the presence of a sticky discharge.

In mild cases this slightly increases, there is a moderate degree of intolerance of light, and it may extend to the other eye. Such cases are generally caused by carelessness in washing, by which the child has been allowed to take cold, or the eyes have been irritated by too great exposure to the light, or what is more common, by the entrance into them of soap or other irritating matter. In graver cases, the redness,

swelling, heat and intolerance of light rapidly increase. Pus forms freely, the conjunctiva becomes of a deep red color, the lids are held tightly together, to avoid the entrance of the faintest ray of light, and by the glueing of their edges the pus is retained and enormously distends the lids, at the same time producing dangerous pressure upon the eyeballs.

Such attacks are almost invariably caused by the entrance into the eyes of leucorrhœal, more generally of gonorrhœal, infection.

It must always be remembered that every form of conjunctivitis in the new-born is highly contagious, hence, the greatest care must be exercised to prevent it extending to a sound eye or to the eyes of the attendants.

Unless the gravity of the symptoms is speedily remedied, a haziness appears on the cornea, which may become complete opacity, or there may be infiltration of pus, ulceration, and utter destruction of sight.

Treatment.—In the mild form, the inflammation speedily yields to the simplest treatment. Sticking of the lids together must be prevented by the application of sweet oil, cod-liver oil, or some similar article, to the edges, after each cleansing of the eyes. The discharge must be very thoroughly removed by

bathing, at frequent intervals, with warm water, milk and water, or even the breast milk, which is a favorite domestic remedy.

As a mild eye wash, after each cleansing, may be employed: A solution of alum, five grains; or of acetate of zinc, two grains; or of nitrate of silver, half a grain; to rose water, one fluidounce.

A few drops carefully introduced between the lids will soon check the affection, and all the symptoms will speedily disappear.

In the more severe forms there will be found corresponding difficulty in every effort to relieve the distress. The child suffers so greatly from the entrance of light, its eyes are so sensitive to the slightest touch that it obstinately resists the well-meant efforts of its attendants. Hence, in too many cases the nurses are tempted to postpone a process which is a source of so much discomfort to all, or to perform it very imperfectly.

The physician must impress upon all connected with the case the gravity of the symptoms, the unfavorable prognosis, and therefore, the urgent necessity for the utmost painstaking in the performance of this task.

The pus must not be permitted to accumulate; the

cleansing must be frequent, say every hour or two; the lids being carefully separated, and the discharge washed away by the use of a syringe and lukewarm water, and when necessary, by means of a camel-hair brush. This accomplished, eye lotions, similar to those already mentioned, but of more positive strength, may be introduced, so as thoroughly to come in contact with the diseased surfaces:—

R.	Pulv. aluminis,	gr. x.
	vel. zinci acetatis,	gr. iv.
	vel. argenti nitratis,	gr. ij.
	vel. hydrarg. bichlorid.,	gr. $\frac{1}{8}$.
	to aquæ,	f. $\frac{5}{j}$.

By some, it is recommended to add to the water employed in cleansing, carbolic acid, say three to five drops to each ounce.

In the intervals, it is usual to keep the lids covered with cloths saturated in slippery elm water, to which may be added a solution of the acetate of lead.

Where the inflammation is very marked, much comfort is obtained by the use of compresses saturated in ice water, and thus kept constantly cool.

The glueing of the lids can generally be prevented by anointing their edges, at each cleansing, with any mild ointment.

Where, after the decline of the inflammation, granulations remain upon the eyelids, they may be destroyed

by caustic applications. It is preferable to employ pencils made by melting together nitrate of silver one part, nitrate of potassa two parts. To employ this plan, the lids must be everted once daily, the pencil passed carefully over the granular surface, which should then be washed off with a camel-hair brush dipped in salt water, to neutralize any excess of caustic. It is always best to apply some sweet oil to the part prior to the return of the everted lid. As the granulations disappear, the treatment need not be repeated but once every second or third day. Occasionally these granulations require a change of treatment when they do not at once disappear, and then we may employ, in the same manner, the sulphate of copper in crystal.

When ulceration appears imminent, much benefit will be derived from the use of a solution of atropine, dropped into the eye once or twice daily—

R.	Atropine,	gr.ss.
	Aquæ,	f. $\frac{2}{3}$ j.

Of course, during this local treatment the necessity for proper hygienic surroundings and appropriate constitutional treatment must not be lost sight of. Almost every case is greatly benefited by the employment of quinine and iron.

Tetanus.

Though tetanus of the new-born is at present of extremely rare occurrence, yet as it is of the gravest importance, and under favoring circumstances may occur, it will be well to give it a place here.

It generally begins about the fourth to the sixth day from birth.

The author has seen but two cases; both were the result of injury to the navel.

The prognosis is always grave, as death is almost sure to result, generally by the end of the second day.

All authorities agree that every form of treatment alike fails to relieve. As might be anticipated, chloral seems to promise better results than any other remedy. This is admitted by all who have tried it, and hence it is well worthy of employment. It should be given in doses of half a grain to one grain every hour, or if swallowing is not possible, in double that dose by the rectum, until profound sleep is induced. Highly nourishing food and stimulants must not be omitted.

General Management.

Having in a previous page treated of the nourishment of the child, it remains but to give some general views as to what else is demanded, in order that it may be placed under the most favorable circumstances to fight the battle of life.

Cleanliness is next to nutrition, in importance. This must be regarded as an indispensable daily duty, not to be hurried over, but to be performed with the utmost fidelity. A full bath of warm water, 85° to 92° F., given in a room with a temperature not under 75° F., without the use of soap, save where absolutely necessary to remove dirt, will meet the indications. The child should not be kept in the water too long, not beyond fifteen minutes, lest the temperature should fall to a point to produce chilliness. In summer the child may be allowed to remain unclothed and in the water for a considerable time, but in cold weather, as the water is constantly cooling and the temperature of the room is very liable to fall, a chill might be caused and the good effects of the bath thus be counteracted. In drying its skin the nurse should employ soft towels, not scrubbing, but gently rubbing the surface, so as to induce a complete reaction and a glow over the whole body. Chilliness after a bath

must always be regarded as a warning sign, and every effort should at once be made to counteract danger from cold. This symptom is frequently followed by abdominal pain, diarrhœa or dysentery, in summer, and in winter, by the affection known as "snuffles;" or it may even result in an attack of croup, etc.

Sunlight and fresh air are two very important factors in the growth of a healthy child. It is doubtless, in a great degree, owing to the abundant supply of these hygienic aids that so many children are enabled to survive the neglect of cleanliness, food and care of every kind. Hence the physician should most earnestly insist upon the necessity of proper ventilation of the nursery, and the admission of sunlight, though at the same time, care must be observed that its tender eyes are not exposed to a bright glare, or that its unprotected body is not subjected to draughts.

The TEMPERATURE of the room requires consideration. Living, as so many of the poorer classes do, in small houses or a few rooms, frequently the one room must suffice for living, cooking, and even sleeping in. Here the heat at one hour is excessive, as where cooking, ironing, etc., are going on; anon, the work being finished, the fire is allowed to die down, for economy, and the little one is exposed to the other

extreme. Or, the infant is carried from a warm room to a cold chamber, where it is too frequently allowed to sleep without sufficient additional clothing. Under such circumstances, the wonder is that the sickness among infants is as small as we find it. With this condition of affairs, it becomes necessary for the physician to explain most carefully to the care takers of the infant the importance of not exposing it to these extremes, but, on the contrary, to keep it as much as possible in an atmosphere of a moderate temperature, and when exposure to either extreme becomes unavoidable, that it should be protected by the proper clothing, etc.

The CLOTHING, in warm weather, should be such as not to hamper the freest movements of respiration and muscular action, and in cold weather should fully protect the entire body, and particularly the feet and legs. The use of the softest flannel next to the skin, even in summer, will efficiently protect the infant from the sudden variations of temperature so constantly occurring in this country; especially should the chest and abdomen be thus protected. Some children are so liable to cutaneous irritation, that it becomes necessary to place beneath the flannel a thin muslin garment.

At night an entire change of the clothing should be insisted upon. All the day clothing should be placed so as to secure a thorough airing and drying, in readiness to be resumed when the infant is dressed. The napkins should be carefully changed when soiled, and never dried and reapplied without washing.

Finally, the physician should urge, most earnestly and emphatically, the avoidance of all nostrums, sleeping drops, and the countless poisons so constantly employed by those who have the care of infants. They destroy digestion, enfeeble the system, and thus when the child is attacked by illness, it speedily falls a victim to what would else have been thrown off without difficulty.

· INDEX.

	PAGE
After delivery,	68
pains,	55
Apnoea neonatorum,	81
Artificial respiration,	81
Asphyxia,	81
Atlee, W. L., on expression of placenta,	58
 Barker, Fordyce, on after-pains,	 57
on diet of lying-in,	86
on retention of urine,	61
Bathing the infant,	118
Binder, the,	54
Breech presentation,	77
Breasts, the,	99
Bromide of potassium,	74
 Caput succedaneum,	 106
Carus' curve,	87, 49
Catheter, passage of,	60, 62
Cephalæmatoma,	106
Child, nourishment of the,	89
accidents and diseases of,	101
Chloral,	15, 21, 23, 74
Cleanliness with infant,	118
Collyria,	109, 110
Colpeurynter,	22, 26, 71

	PAGE
Conjunctivitis,	107
Convulsions,	73
Cord, the,	102
hemorrhage from the,	104
Cramps,	58
Crede's method with the placenta,	53
Curve of Carus,	37, 49
pelvis,	37, 49
Cystocele,	24
Dewees, on after-pains,	56
Dilatation, slow,	18
Dilator, the,	22
Disinfectants,	98
Electricity,	28
Ergot,	29
Examination, vaginal,	14
Excess of liquor amnii,	28
Expression of placenta,	51
Fainting,	67
False pains,	13
Fever, milk,	99
Flatulence,	58
Forceps,	41
Fungous granulations of the navel,	105
Goodell, Wm., on the perineum,	39
Harris, R. P., on milk diet,	89
Hemorrhage, post-partum,	65
from the cord,	104
Hernia,	25
Hot water injections in post-partum hemorrhage,	70

INDEX.

119

	PAGE
Inefficient pains,	23
Infant, the,	102
accidents in delivery of,	106
bathing,	113
clothing of,	114
conjunctivitis in,	107
general management of,	113
sunlight and air for,	114
temperature of nursery,	114
tetanus of,	112
Labor, obstructions in,	24
position in,	35
Laceration of perineum,	38
Leishman, on after-pains,	56
diet of lying-in,	85
Ligation of the cord,	102
Lochia,	97
Membranes, rupture of,	28, 33
Milk, as diet,	89
fever,	99
Navel, fungous granulations of,	105
hemorrhage from the,	104
Neuralgia,	58
New-born, tetanus of,	112
Nipple, retracted,	96
Nipples, sore,	93
Nourishment of the child,	89
of the woman,	84
Nursery, temperature of,	114
Obstructions in labor,	24
Oxytocics,	29

	PAGE
Pains, after,	55
false,	13
inefficient,	23
Pelvic curve,	37, 49
Penrose, R. A. F., on hemorrhage,	70
Perineum,	38
Placenta,	49
prævia,	71, 72
Playfair, on the perineum,	39
Position,	35
Post-partum hemorrhage,	65
Presentation of breech,	77
Purgatives,	64
 Quinine,	 31
 Respiration, artificial,	 81
Retention of urine,	59
Retracted nipple,	96
Rigby, on nourishment of child,	90
Rupture of membranes,	28, 33
 Schroeder, on diet of lying-in,	 86
Slow dilatation,	18
Smith, A. H., on quinia,	31
Smith, Tyler, on after-pains,	57
Sore nipples,	93
Styptics,	68, 69
 Tampon,	 72
Tetanus in child,	112
Temperature of nursery,	114
 Urine, retention of,	 59

INDEX.	121
	PAGE
Vaginal examination,	14
Vectis,	40
Vinegar, in post-partum hemorrhage,	70
Wilson, H. P. C., on hemorrhage,	70
Woman, nourishment of,	84

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